



## May 2000



# LANTDIV

## **Electronic Bid Solicitation Manual of Policies and Procedures**

April 2000



EBS



**Electronic  
Deliverables**



CAD



**Electronic  
Signatures**



# Table of Contents

<b>Introduction .....</b>	<b>6</b>
<b>1. General Policy and Implementation Issues .....</b>	<b>9</b>
1.1 Electronic Bid Solicitation Policy Summary .....	9
1.2 EBS Software and Hardware .....	10
1.2.1 EBS Processing and Signing Workstation Requirements .....	10
1.2.2 EBS Processing Workstation Requirements .....	10
1.2.3 System Requirements .....	10
1.3 Suggested Business Process for Signing of PDF Drawings .....	11
1.3.1 Following the Traditional Approval Process .....	11
1.3.2 Signing Tips and Reminders .....	11
1.4 Updates To This Manual .....	12
1.4.1 General .....	12
1.4.2 Your Responsibility .....	12
1.4.3 Our Commitment .....	12
1.4.4 Older Versions .....	12
1.5 EBS Support and Resources .....	12
1.5.1 General .....	12
1.5.2 Industry (non-LANTDIV) Support .....	12
1.5.3 LANTDIV Support .....	13
Supported Software .....	13
Support Vehicles .....	13
<b>2. Drawings: Creating PDFs .....</b>	<b>15</b>
2.1 General .....	15
2.2 Creating PDF Files in <i>AutoCAD R13</i> .....	15
2.2.1 Adding a System Printer in <i>AutoCAD R13</i> .....	17
2.2.2 <i>AutoCAD</i> “.pcp” File Settings .....	17
2.3 <i>PDFWriter</i> Printer Settings in Control Panel .....	18
2.4 Printing Multiple <i>AutoCAD</i> PDF's ( <i>Windows95</i> ) .....	19
2.5 Creating PDF files in <i>AutoCAD 2000</i> .....	21
<b>3. Specifications: Creating PDFs .....</b>	<b>25</b>
3.1 General .....	25
3.1.1 General Discussion .....	25
3.1.2 Overview .....	25
3.2 Creating Portable Document Format (PDF) files from <i>SpecsIntact</i> with SGML .....	26
3.3 Coversheet for Electronic Bid Sets .....	26
3.4 Assembling and Naming the Final PDF File .....	27
3.5 Bookmarking .....	27
3.6 Inserting PDF Files .....	28
3.7 Inserting Blank Pages .....	31
3.8 Creating Thumbnails .....	31
3.9 File Features .....	31
3.10 Record Documents .....	31
<b>4. Assembling Final PDFs: For Publication in <i>Acrobat</i> .....</b>	<b>33</b>
4.1 Assembling The Multi-Page PDF .....	33
4.1.1 View and Layout .....	33
4.1.2 Merging Separate PDF Files Using Adobe <i>Insert</i> Command .....	34
4.1.3 Merging Multiple PDF Files .....	34
4.2 To Create Thumbnails .....	35
4.3 Repositioning Sheets Within a Master PDF .....	35
4.4 Deleting/Extracting/Replacing Pages in the Master PDF .....	35
4.5 Bookmarking .....	36
4.5.1 To create a new bookmark in the current document .....	36

4.5.2	Deleting/Moving/Editing Bookmarks .....	37
4.5.3	Bookmarking Shortcuts for Specs .....	37
4.5.4	Bookmarking Naming Convention .....	37
4.6	Saving and Setting Properties in PDF's .....	38
4.6.1	EBS Filenaming Convention .....	38
4.6.2	General Properties .....	38
4.6.3	Opening View Mode (Standard, Bookmark, or Thumbnail) .....	39
4.6.4	Width of Bookmark View Pane .....	39
4.6.5	File Size/Compression Properties .....	39
4.7	Incorporating Reference Documents .....	40
4.7.1	General .....	40
4.7.2	Separate Reference PDF File .....	40
4.7.3	Scanning Criteria .....	40
4.7.4	Reference PDF File Enhancements .....	40
<b>5.</b>	<b>DeSign Signature Software .....</b>	<b>43</b>
5.1	Installation .....	43
5.1.1	Install <i>PenOp</i> Software .....	43
5.1.2	Install <i>DeSign</i> .....	43
5.1.3	Configure <i>DeSign</i> .....	43
5.2	General Instructions .....	44
5.2.1	Process .....	44
5.2.2	Startup .....	44
5.2.3	Select File Type .....	45
5.2.4	Open File Dialog .....	45
5.2.5	Sign Document .....	47
5.2.6	Capture Signature .....	48
5.2.7	Options .....	49
5.2.8	Removing Signatures .....	49
5.2.9	Accessing Help .....	50
5.3	Uninstalling <i>DeSign</i> .....	50
5.4	FAQ – Frequently Asked Questions .....	51
5.5	Troubleshooting .....	52
5.6	Support .....	53
<b>6.</b>	<b>Electronic Deliverables: Media and Format .....</b>	<b>55</b>
6.1	Introduction .....	55
6.2	Type of Submittal Data and Required Media .....	55
6.2.1	All Electronic Deliverables .....	55
6.2.2	Plans .....	55
6.2.3	Specifications .....	55
6.2.3.1	Submittal Register .....	55
6.2.4	Cost Estimates .....	55
6.2.5	Virus Scanning .....	55
6.2.6	Recordable CD-r Criteria .....	56
6.2.7	Floppy Disk (3.5 Inch) Criteria .....	56
6.2.8	Submittal Information and Labeling .....	56
<b>7.</b>	<b>CAD Standards .....</b>	<b>59</b>
7.1	Preface .....	59
7.2	Introduction .....	59
7.3	Target System .....	59
7.4	File Naming and Sheet Identification .....	59
7.5	Text Fonts and Sizes .....	61
7.6	Sheet and Border Size .....	62
7.7	Layer Names .....	62
7.8	Pen Weight / Line Colors .....	62
7.9	Support Files .....	62
7.10	Standard Symbols .....	62

<b>Appendix A .....</b>	<b>67</b>
A.1 EBS Drawings and Specifications Multi-Sheet PDF Checklist .....	67
<b>Appendix B .....</b>	<b>69</b>
B.1 Help with Printing PDF Drawings to Various Scales .....	69
B.1.1 General .....	69
B.1.2 Printing Signatures and Other Annotations on PDF's .....	69
B.1.3 Printing Full Size NAVFAC D (100%) TO ARCH D, ANSI D, or ISO A1 Paper .....	69
B.1.4 Printing Half Size NAVFAC D (50%) TO ANSI B/ISO A3 Paper .....	69
B.1.5 Printer Driver Guidance .....	70
<b>Appendix C .....</b>	<b>73</b>
C.1 Installing <i>Adobe Acrobat 4.0</i> .....	73

# Introduction

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April 2000

LANTDIV is very excited to be leading the Naval Facilities Engineering Command and our profession into the area of paperless engineering solicitations, otherwise known as Electronic Bid Solicitations (EBS). We have had many initiatives and government mandates that have pushed us to accelerate their deployment for over two years now. However, the issue of electronic signatures was ignored when most of these mandates were promulgated. LANTDIV, in the interest of the extended engineering and design construction community, decided to spearhead this issue in order to enable true EBS documents that are at least as good as the previous documents of record.

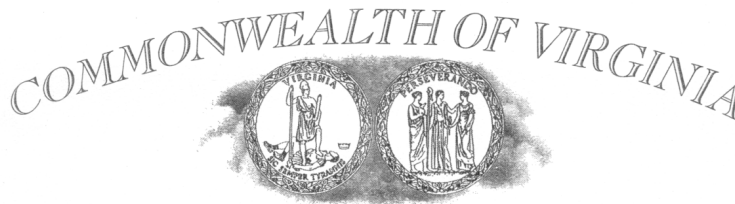
LANTDIV is continuing to facilitate the adoption of electronic signatures at the Virginia State administrative level (DPOR APELSCIDLA Board) as a model for other States. On March 9, 2000, we received notice that as a result of our efforts, the Board will begin the regulatory review process to permit the use of electronic, seals, signatures and dates. (See DPOR letter of March 9, 2000 to the Atlantic Division). We expect this process to take up to two years and that other states will follow and/or be superseded by higher legislative efforts at the federal level. This, however, does not prohibit you from complying with our EBS requirement during the interim. Submission of EBS documents is a requirement of LANTDIV and is not intended to replace or violate any statutory or regulatory requirements of the design professional. The EBS submittal should be viewed as supplementary to your traditional wet-signed documents until such time as the governing regulations or statutes in your home state allow the sole submission of electronic documents. Since LANTDIV is not governed by State law or regulation, there will be no LANTDIV requirement for you to submit those wet-signed documents.

LANTDIV is confident that the EBS solution presented in this manual minimizes your associated costs and positions you to take full advantage of the related benefits that EBS offers. The selected electronic formats were based upon open industry COTS technology so that you may possibly re-use them in other aspects of your business, simultaneously allowing for future flexibility. This manual provides policies and procedures necessary to produce EBS documents beginning with the production of the CAD files, conversion to solicitation format, and resulting with the final media submittal.

This EBS Manual has been prepared in order to assist you in the implementation of the EBS requirement. We hope you find it valuable, and as always, appreciate your feedback.

William H. Crone, P.E.  
Director,  
Engineering and Design Division





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March 9, 2000

Mr. W. H. Crone, P.E.  
Naval Facilities Engineering Command  
Atlantic Division  
Department of Navy  
1510 Gilbert St.  
Norfolk, VA 23511-2699

Re: Electronic Bid Solicitations (EBS) and Electronic Signatures

Dear Mr. Crone:

The Board for Architects, Professional Engineers, Land Surveyors, Certified Interior Designers and Landscape Architects (APELSCIDLA Board) considered the work of its Electronic Seals and Signatures Committee at their meeting on Wednesday, March 8, 2000. The system your office demonstrated to us appears to provide very important safeguards for the authenticity and security of these documents and helped to serve as a basis for the regulatory direction adopted by the committee.

The Board agreed to start the regulatory review process that will establish requirements that may permit the use of electronic seals, signatures and dates. This process is designed to ensure public input and takes approximately two years to complete before the Board's regulations will allow the use of electronic seals, signatures and dates.

Thank you for sharing your organization's efforts in this area and we will certainly keep your office informed of the progress that is made in revising the Board's regulations.

Sincerely,

APELSCIDLA BOARD

Mark N. Courtney  
Assistant Director

C: Duncan Abernathy, VSAIA  
Leigh Dicks, VSPE

MNC

Board for Accountancy, Board for Architects, Professional Engineers, Land Surveyors, Certified Interior Designers, and Landscape Architects, Cemetery Board, Board for Asbestos and Lead, Auctioneers Board, Board for Barbers, Board for Branch Pilots, Board for Contractors, Board for Cosmetology, Board for Geology, Board for Hearing Aid Specialists, Board for Opticians, Polygraph Examiners Advisory Board, Professional Boxing and Wrestling, Real Estate Appraiser Board, Real Estate Board, Board for Professional Soil Scientists, Board for Waste Management Facility Operators, Board for Waterworks and Wastewater Works Operators.

# General Policy and Implementation Issues

# 1. General Policy and Implementation Issues

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## 1.1 Electronic Bid Solicitation Policy Summary

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**General** This policy is partly founded on NAVFACINST 4250.1 relating to Electronic Bid Set (EBS) policy. It has been modified here as a LANTDIV Engineering and Design Division Policy in order to bring it up to date, tailor and extend it to processes adopted at LANTDIV. This manual is also referenced from the LANTDIV Design Guides and your *Appendix A* contract scope.

### **Format**

**EBS Specifications:** All specifications shall be converted to the *Adobe Acrobat* PDF format directly from their authoring software. All specifications should be combined into a single PDF file to facilitate ease of use.

**EBS Drawings:** Drawings shall be converted to the *Adobe Acrobat* PDF format directly from their authoring CADD software. All drawings should be combined into a single PDF file to facilitate ease of use.

**EBS Electronic Signatures** Electronic signatures incorporating *PenOp* technology on the electronic EBS PDF document format required. The associated LANTDIV process and format has received extensive research and development from LANTDIV. LANTDIV plans to only retain these electronically signed documents as its documents of record.

**Wet-Signed Documents** Any wet-signed documents produced should be produced from the final electronic PDF documents (prior to electronic signature application) that are submitted to LANTDIV.

**EBS Bookmarking** PDF files shall be bookmarked and visual “thumbnails” created. *Acrobat* allows for this to be done within the native software however, various tools are available to automate this process. A bookmark should be created for the beginning of each drawing discipline or specification section. Sub-bookmarks should be created for individual drawing sheets. Bookmark wording should be as descriptive as practical (i.e. S-1 Foundation Plan). When complete, the files should open to the “bookmarks” view as the default view with the drawing or specification sheets visible in “fit page” magnification.

**EBS Password Protection** Password protection in order to prevent changes to the PDF solicitation files is not allowed at this time until all documents are released from the LANTDIV Engineering and Design Division, as it may restrict the addition of final LANTDIV approval signatures. (If desired, any password or other protection should be implemented by the last document approver at LANTDIV.)

**EBS Quality Review** The EBS preparer shall perform a quality review check of the electronic documents, associated bookmarks and other items.

**Deliverables** Two CD's with project deliverables should be provided. Deliverables include all source electronic files relating to Specifications preparation, Drawing preparation, Electronic Bid Sets preparation and any other contracted documents. (This includes as a minimum CAD .dwg, specifications .sec files, and final signed EBS PDF files.) The intent is that all electronic files be delivered in a format that minimizes the amount of time and effort to LANTDIV, should it desire to modify, reproduce, or otherwise re-use the delivered documents.

## 1.2 EBS Software and Hardware

---

### 1.2.1 EBS Processing and Signing Workstation Requirements

Software/ Hardware	Version	Approximate Cost	Vendor
<i>DeSign</i>	ver 1.41	Free	<a href="http://www.efdlant.navfac.navy.mil/lantops_04/ebs.htm">http://www.efdlant.navfac.navy.mil/lantops_04/ebs.htm</a>
<i>PenOp</i> Signature	ver 3.1 or later	\$200 for the bundle	<a href="http://www.penop.com/lantdiv_ebs.html">http://www.penop.com/lantdiv_ebs.html</a>
<i>PenOP Adobe Acrobat Plug-In</i>	ver 1.55		
<i>PenOp</i> Approved Digitizer	various		
<i>Adobe Acrobat</i>	ver 4.0	\$50 GSA \$175 Retail	various locations

Notes: 1. Signing workstation can be shared by multiple users, if centralized in common area. Separate copies of *PenOp* are only required if required on multiple workstations.  
2. *PenOP Signature Book* not required or utilized by LANTDIV at this time.

### 1.2.2 EBS Processing Workstation Requirements

Only *Adobe Acrobat 4.0* is required to produce EBS drawings and specifications in the PDF format from the native authoring software.

### 1.2.3 System Requirements

This manual of policies and procedures assumes you have the following pre-installed:

- *Windows 95, NT 4.0 OS* (*Windows 98* or *2000* not tested)
- *Adobe Acrobat 4.0*
- CAD software (instructions for drawings to PDF only prepared for *AutoCAD*)
- All items listed in Section 1.2.1 except *DeSign*

## 1.3 Suggested Business Process for Signing of PDF Drawings

---

### 1.3.1 Following the Traditional Approval Process

- When reviewing or signing a set of PDF drawings, insist that you receive a hard copy of prints that are created *FROM THE PDF's* you are about to electronically sign. Insure that these are the documents that are intended for final EBS use. This is the equivalent of reviewing the mylar. If the designers/technicians make prints from CAD files vs PDF's, you run the risk that something gets changed during the PDF conversion. Optionally you can skip the hardcopy print if you are satisfied that you've reviewed *EVERY* sheet online to your satisfaction.
- If you are worried about custody of the electronic documents during the interim when the final PDF's have been produced and you have not signed, you will need to institute internal control procedures. (This is similar to mylars laying on someone's desk before you sign them and may not be an issue in your firm.)
- Ask designers to print a hard copy checkset of PDF's to insure proper conversion. Sometimes mistakes are made and the sheet does not get properly aligned. If it is not created properly, signatures will not be applied correctly.
- Designers should save a copy of unsigned PDF's until the signatures are complete in case for some reason the job must be re-compiled, or the master file gets corrupted during the signing process.
- After signing, you should spot check or otherwise perform a quality review to insure your signatures were properly inserted.

### 1.3.2 Signing Tips and Reminders

(See Section 5 for more details)

- Prior to beginning the signing process, check with the LANTDIV AIC/EIC to see if there will be any special requirement to sign discipline sheets "separately" as opposed to all documents at one time. (This may be required if the plans need to be "separated" for web site posting.)
- See Section 5.4, FAQs, for the best way to manage signing PDFs when multiple consultants are involved.
- Each discrete signing event is really a single signature applied across a series of sheets.
- Signing includes authentication information for your signed drawing series.
- Replacing a sheet (due to late modification or other reason) negates the signatures on it. (Just like re-plotting a mylar does).
- All signatures on a sheet (*and the range they apply to*) must be erased and re-signed if a sheet is replaced after signing has begun.
- A single signature can always be applied "manually" with *PenOp* alone, but it will "apply" to/authenticate the entire file in lieu of the signed sheet only. *DeSign* only automates the process.
- A signed PDF file can be "interrogated" if file integrity is in question.

## 1.4 Updates To This Manual

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### 1.4.1 General

It is expected that this will be a dynamic manual due to the nature of the computer technology subject matter. Newer versions of software and hardware are constantly released causing disruptions in previously operating solutions. Additionally LANTDIV may revise its policy and guidance to take advantage of better solutions, as they become available.

### 1.4.2 Your Responsibility

It is your responsibility to stay current with these changes. LANTDIV plans to utilize its Internet web site as the primary tool for informing you of updates and revisions. Please visit these sites frequently.

LANTDIV Design Division Web Address

[<http://www.efdlant.navy.mil/lantops\\_04/home.htm>](http://www.efdlant.navy.mil/lantops_04/home.htm)

LANTDIV EBS Web Address

[<http://www.efdlant.navy.mil/lantops\\_04/ebs.htm>](http://www.efdlant.navy.mil/lantops_04/ebs.htm)

### 1.4.3 Our Commitment

LANTDIV will at a minimum post the updated manuals and policies relating to EBS on the LANTDIV website in the appropriate area. LANTDIV will additionally attempt to exploit other pro-active methods of informing you of updates as time and technology permits. These may include registered email lists, news sections, etc.

### 1.4.4 Older Versions

Although LANTDIV will attempt to keep an archive of older versions of related policies and manuals on the website, it is your responsibility to retain your own copy, should contractual issues arise. Our plan is to release updated versions on our website labeled with new effective dates.

## 1.5 EBS Support and Resources

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### 1.5.1 General

This manual is LANTDIV's primary support vehicle. Limited support is available directly from LANTDIV for implementing EBS and associated policies. Open, COTS software has been adopted to the maximum extent practical in order to insure available support from industry sources. However, LANTDIV is available to answer questions relating to the clarification of its policy and/or software it has provided. It is expected that firms doing business with LANTDIV use their own IT support prior to contacting any LANTDIV personnel. LANTDIV will offer automated or self-help support where possible and practical.

### 1.5.2 Industry (non-LANTDIV) Support

*Adobe Acrobat* (PDF help)

[<http://www.adobe.com/products/acrobat/main.html>](http://www.adobe.com/products/acrobat/main.html)

*PenOp* (Core electronic signature technology)

[<http://www.penop.com>](http://www.penop.com)

Tri-Services Solicitation Network (Other Government EBS initiatives)

[<http://tsn.wes.army.mil>](http://tsn.wes.army.mil)

CADD/GIS Technology Center (Core Government CAD Standards)

[<http://tsc.wes.army.mil/>](http://tsc.wes.army.mil/>)

### 1.5.3 LANTDIV Support

*If you are executing work for an agency other than the Atlantic Division, Naval Engineering Command, please contact that agency for support.*

#### Supported Software

LANTDIV *DeSign* electronic signature application  
LANTDIV CAD title block and printing configuration files  
LANTDIV CAD standards

#### Support Vehicles

##### WEB SUPPORT/UPDATES

LANTDIV Design Division Web Address

[<http://www.efdlant.navfac.navy.mil/lantops\\_04/home.htm>](http://www.efdlant.navfac.navy.mil/lantops_04/home.htm)

LANTDIV EBS Web Address

[<http://www.efdlant.navfac.navy.mil/lantops\\_04/ebs.htm>](http://www.efdlant.navfac.navy.mil/lantops_04/ebs.htm)

##### EBS eMAIL SUPPORT

Email addresses for the following topics are listed on the EBS Web Address.

General EBS

Specifications

CAD, Title Blocks, etc.

Electronic Signatures

Electronic Submittal Format and Media

##### TELEPHONE

Please refrain from using this medium unless your issue is urgent. Web and email support is the preferred support medium.

# Drawings

## Creating PDFs



## 2. Drawings: Creating PDFs

### 2.1 General

These instructions have been developed for *AutoCAD R13*, *AutoCAD 2000*, and *Windows 95* OS. Most of these instructions were developed for internal use and may refer to filenames, directories or drive letters that do not exist in your office. PDF's of CAD files can be made from many other CAD software packages, however, we do not have any specific instructions other than for *AutoCAD*. Insure that *Acrobat 4.0* is installed according to Appendix C.

### 2.2 Creating PDF Files in *AutoCAD R13*

From *AutoCAD*, choose Print from the menu or command line as you normally would. The *Plot Configuration* window appears. Choose *Device and Default Selection* button. See Figure 2.4

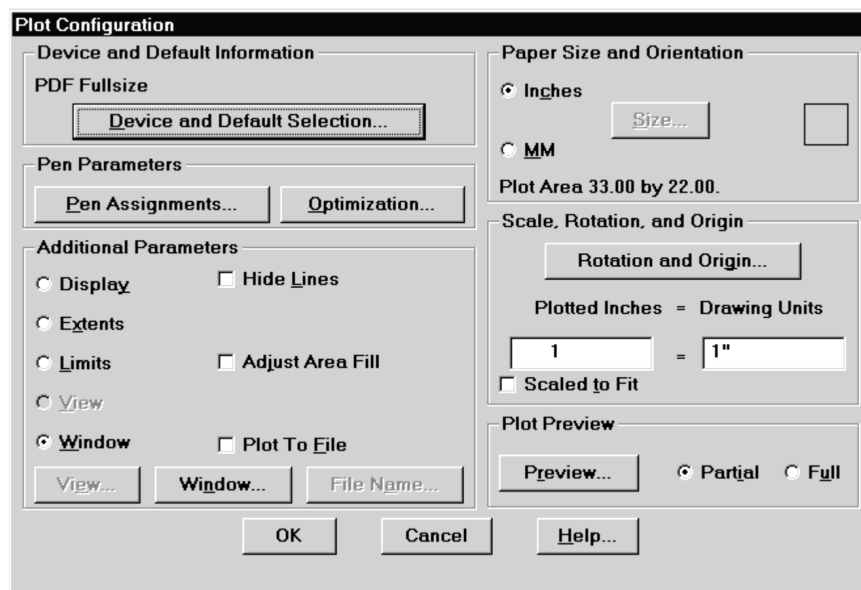


Figure 2.4

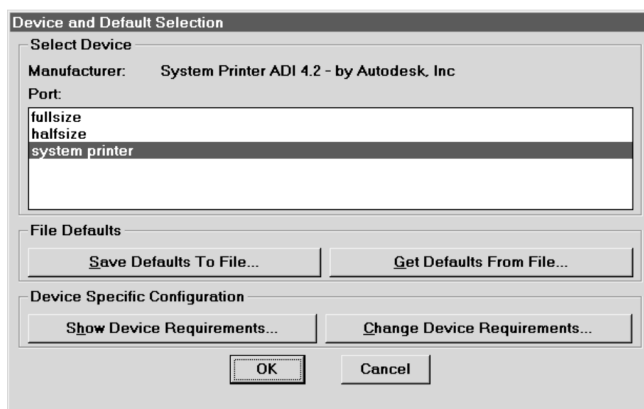


Figure 2.5

Select System Printer. See Figure 2.5. (if not available, see Section 2.2.1 “Adding a System Printer in *AutoCad R13*”)

Select *Get Defaults from File* button, following window appears (you may have your pcp files in another directory). See Figure 2.6

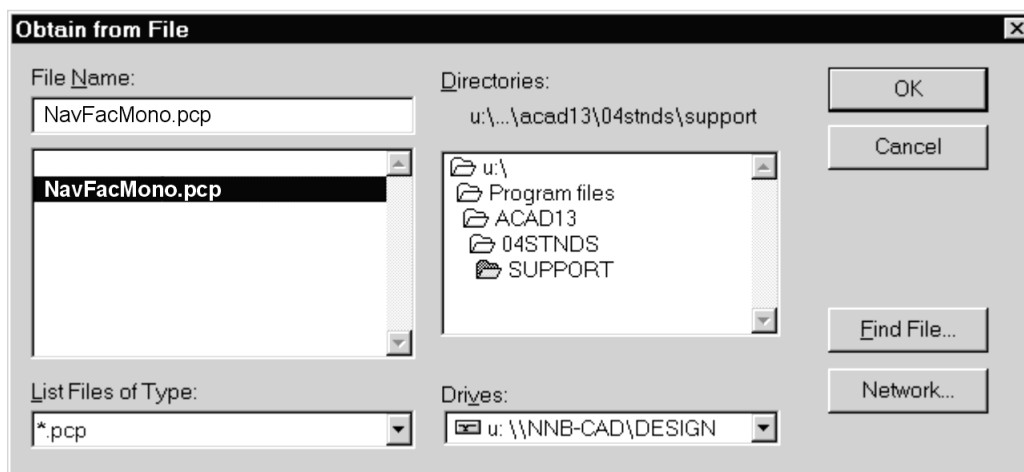


Figure 2.6

Select file NavFacMono.pcp, Press OK. (Once you change the selected pcp file, you do not need to keep selecting it if you plan to continue to make the same size pdfs.)

Select Change Device Requirements (see Figure 2.5), the *Print Setup* window appears. Change Printer to *Acrobat PDFWriter*. See Figure 2.7.

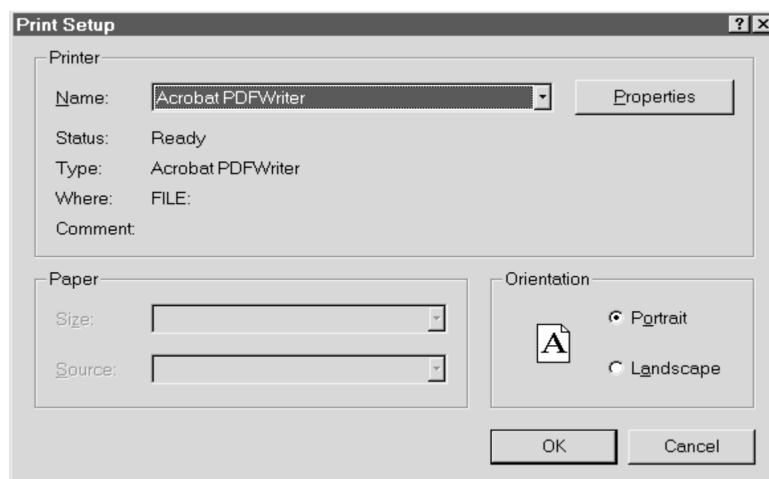


Figure 2.7

Select Properties (see Figure 2.7) and set to those in Figure 2.8, if they are not already set:

Custom size – 33 x 22, Landscape

- Margins – 0.0"
- Resolution – 300 dpi

Press OK

Press OK to Print Setup Window

Press OK to Device and Default Selection Window

On *Plot Configuration* window (Figure 2.4), select *Window* and set the window coordinates to 0,0 and 33,22.

Make sure *Rotation* is set to 0, *Scale* is set to 1 = 1", and *Plot Origin* is set to 0,0.

Press OK on "Plot Configuration"

You will be prompted for filename in Figure 2.9.

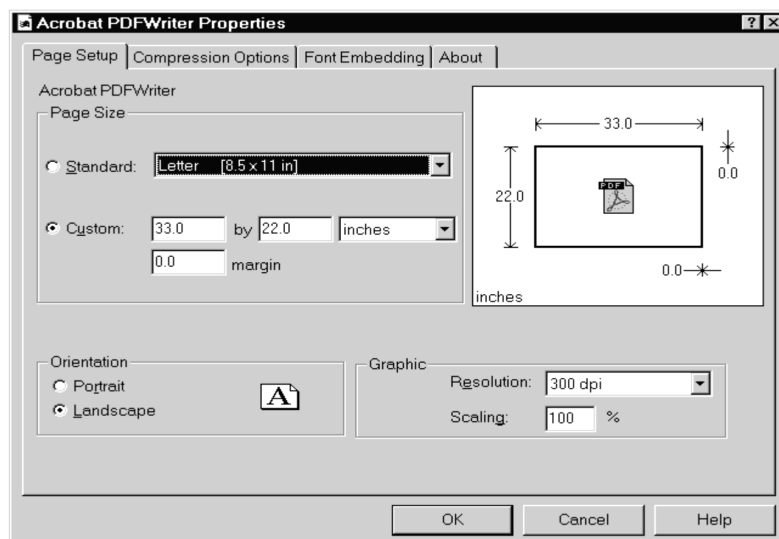


Figure 2.8

Select directory and type in the filename. Suggested filename format is drawing name with pdf extension. Ex. 91234S101.dwg prints to 91234S101.pdf (*PDFWriter* selects this name for you automatically).

Press OK. File will be saved as you directed. Use *Acrobat Reader* or *Exchange* to view if you desire. If you want to view automatically, check “View PDF File” checkbox in “Save PDF File As” Window.

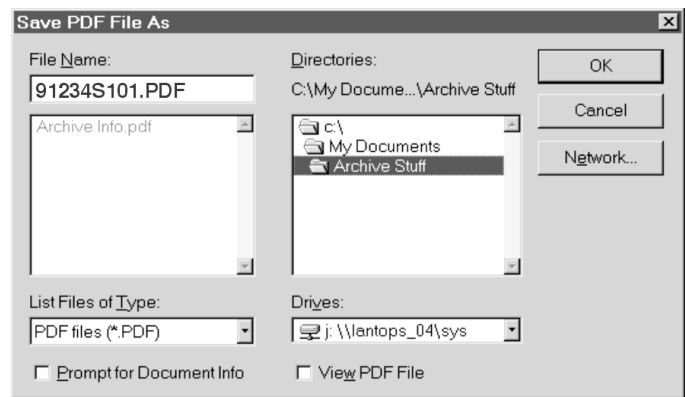


Figure 2.9

## 2.2.1 Adding a System Printer in AutoCAD R13

From the *Configuration* menu select *5. Configure plotter*, then *1. Add a plotter configuration*.

From the list of available plotters select *System Printer*.

Set - *Default to Control Panel Settings?* to *N*.  
*Do you want dithered output?* to *Y*.  
*Update pen table on device change?* to *Y*.

Verify that paper size is set to 33 wide by 22 high, and save the configuration (the description *System Printer* is used in this document, but is not required for proper configuration).

## 2.2.2 AutoCAD “.pcp” File Settings

All pen widths and colors shall comply with current CAD Policy. (See Chapter 7) All pen COLORS shall be set to pen NUMBER 7, except as required for grayscales. This is the default pen NUMBER that yields a solid black line in the pdf. Pen NUMBERS 250-254 should be programmed in the .pcp file for 50%, 40%, 30%, 20%, and 10% halftones respectively. See Figure 2.10.

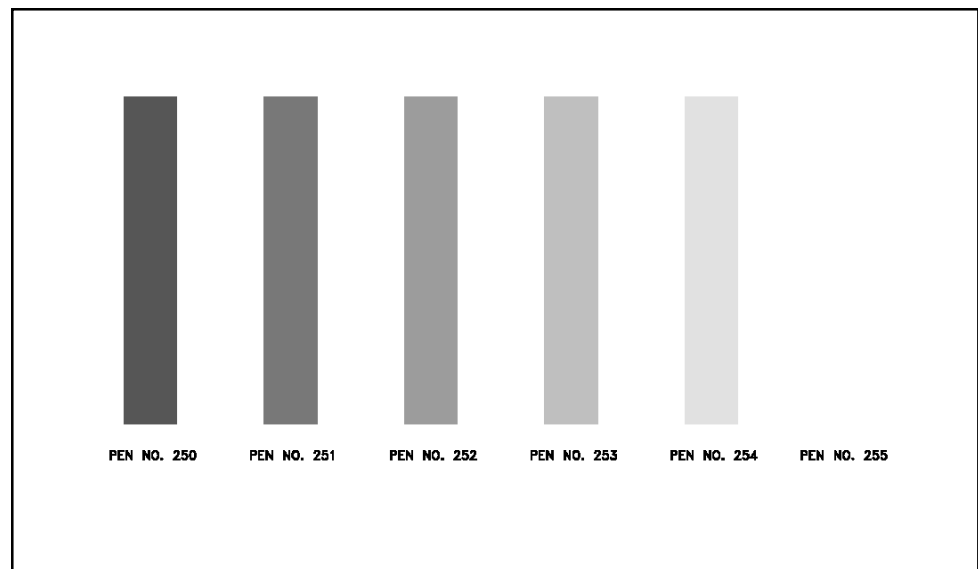


Figure 2.10

## 2.3 PDFWriter Printer Settings in Control Panel

Go to Control Panel in the *Windows 95* OS and find the printers area. Open the default properties of the *PDFWriter* printer driver. See Figure 2.11.



Figure 2.11

If you routinely make PDFs of full size drawings, then it will save time if you select *Setup* and set the default printer properties to the proper settings as shown in Figure 2.12.

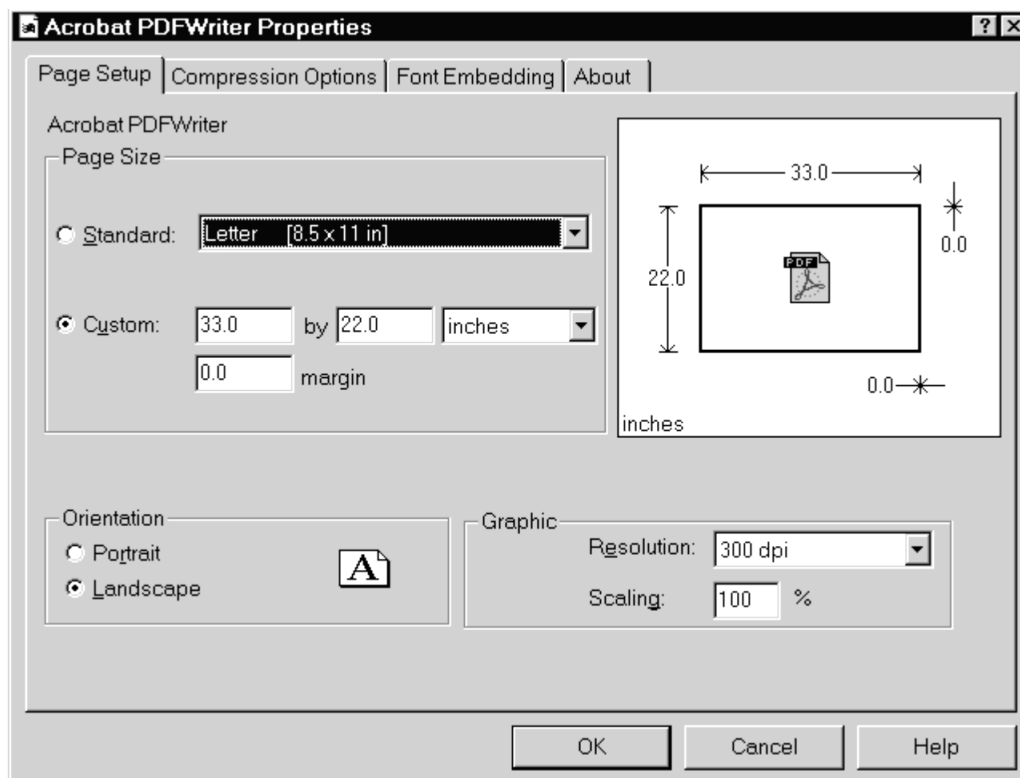


Figure 2.12

## 2.4 Printing Multiple AutoCAD PDF's (Windows95)

Provided that you have followed CAD standards and have all your drawings plotted to the same scale and have all your drawings using the same pen colors, then you can save time by doing the following:

1. Select *PDFWriter* as your default printer in *Control Panel*. Also set up the correct settings in the properties of this printer in control panel as required for 22"x33" sheets (See previous instructions). This will minimize interruptions later.
2. Go to *Windows File Explorer* and find your drawings.
3. Highlight your desired drawings using Shift, Ctrl, or Edit/Select All. See Figure 2.13.
4. Right Click your mouse over the selected drawings and choose "print" from the pop up menu.

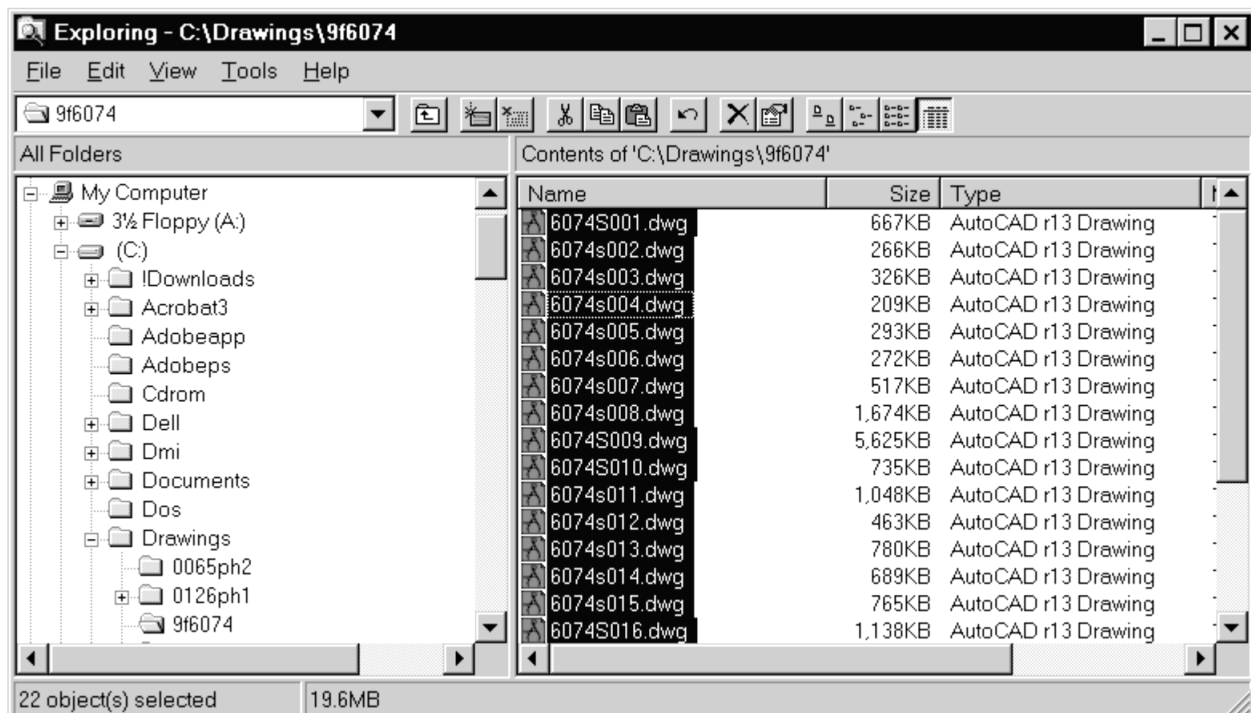


Figure 2.13

*AutoCAD* need not be open. Your PC will run through the process of opening the first drawing in *AutoCAD* and attempting to print automatically. It will stop at the print window within *AutoCAD* if you desire to change anything. If everything is OK, you should only need to hit the OK button. The PC will now try to print the PDF and will stop for a filename. Select OK here if the name is OK. (You may want to deselect the "View PDF" box to avoid another interruption. If you are viewing the pdf's as they are created, you will have to go back to *AutoCAD* to continue with printing.) The PC will then close the first drawing and cycle through all the others in your list.

If this does not work for you, make sure that *AutoCAD* “open” and “print” functions are associated with acad.exe in file types/associations window. Go into *File Explorer* and select View/Options from the pull downs and then select the File Types tab. See Figure 2.14.

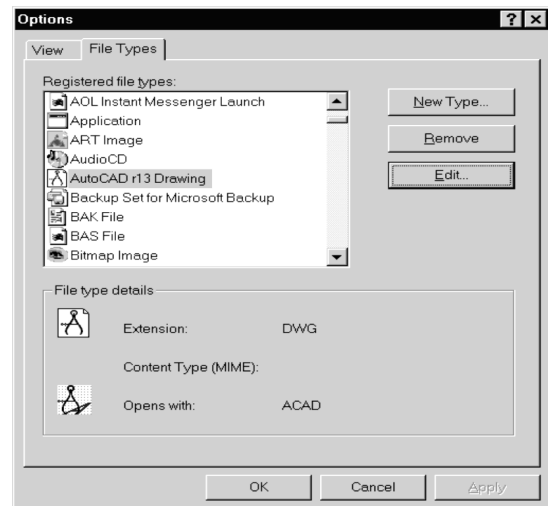


Figure 2.14

Edit each action to make sure it is linked with the application. See Figures 2.15 and 2.16.

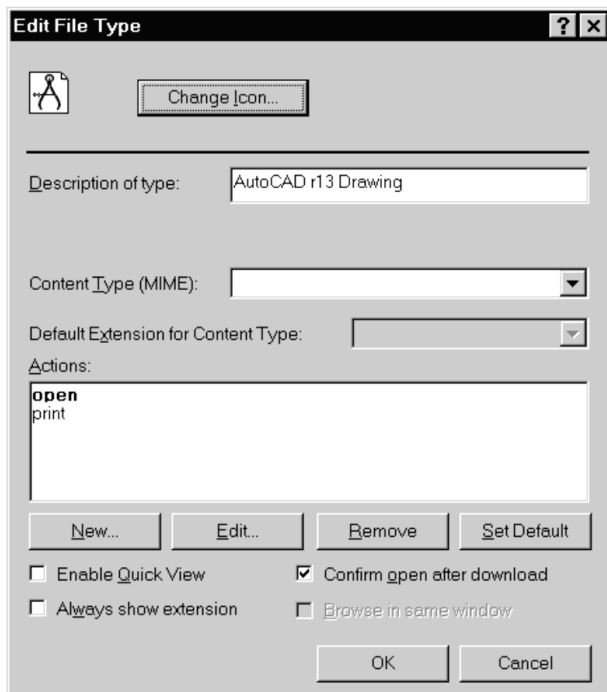


Figure 2.15



Figure 2.16

## 2.5 Creating PDF files in AutoCAD 2000

*AutoCAD 2000* apparently suffers from a bug in the plotting module that makes creating fullsize PDF files not intuitively obvious. The following guidelines may be used to setup *AutoCAD 2000* to create accurate PDF files.

From *AutoCAD*:

- Select the Page Setup for the Layout Tab (if the Layout settings have already been set, then right-click on the Layout Tab and select *Page Setup*)
- Select the *Plot Device* Tab
- In the *Plotter Configuration* section, select the *Acrobat PDFWriter*
- Select *Properties*
  - Select the *Custom Properties* button
    - From the Acrobat PDFWriter Properties window (Figure 2.17), select *Custom Page Size*
    - Set size to 33" x 22" with 0" Margins
    - Set to Landscape, 300 dpi, 100% scaling
    - Select *OK*

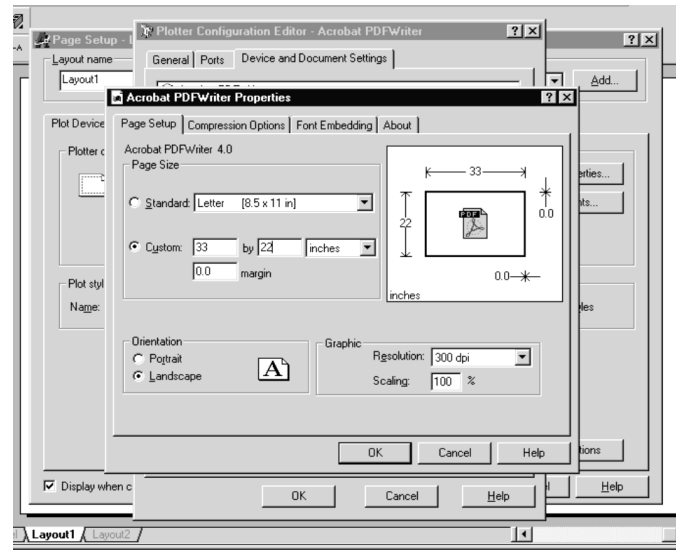


Figure 2.17

- From the *Plotter Configuration Editor* window (Figure 2.18)
  - Select *Modify Standard Paper Sizes (Printable Area)*
    - Select *Letter [8.5 x 11 in.]*
    - Select *Modify*
      - Set all Margins to 0 in.
      - Select *Next*
      - Create PMP File ie: *Acrobat PDFWriter.PMP*
      - Select *Finish*
  - Select "OK"
- Save PC3 file ie: *Acrobat PDFWriter.PC3*

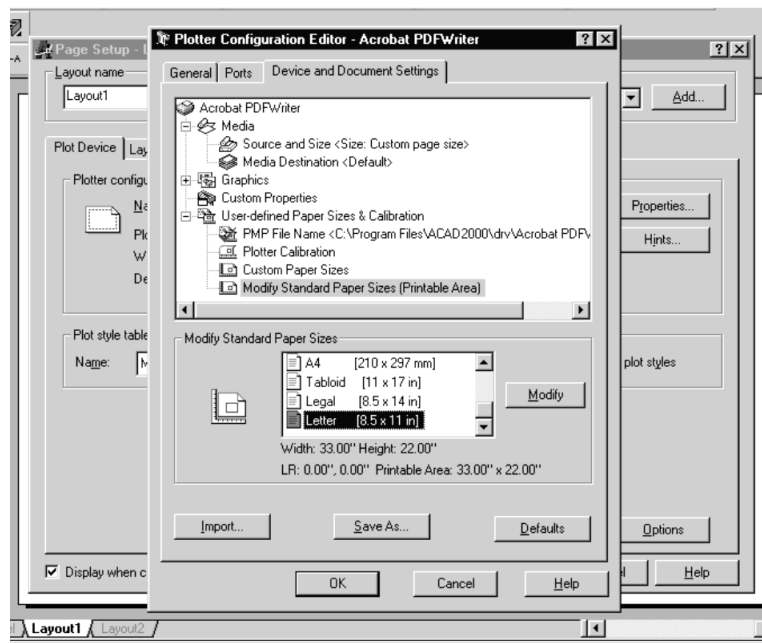


Figure 2.18

**\*\* Standard Paper sizes are now set to 32 x 22 with 0" margins !!! (Not just 8.5"x11")**

In the Plot Style Table section, select the appropriate pen table ie: *NAVFACMono.CTB* (*NAVFACMono.ctb* was created by LANTDIV and is available on the Design Division WEB site. The pen table is based on the plotting guidelines found in the *A/E/C CADD Standards* and the *United States National CAD Standards*.)

- Select the "Layout Settings" Tab (Figure 2.19)
- Set Paper Size to "Letter [8.5 x 11 in.]" or any size other than "Custom"
- Set *Plot Area* to *Window*
- Set window coordinates to 0,0 and 33,22
- Set units as appropriate (if changing to mm, window coordinates should change accordingly)
- Set Plot offset to 0,0 and Scale to 1:1

This completes the Page and Plotter setup for this drawing. To reuse these settings in other drawings, either manually select the saved PC3 and CTB files or, save the current setup by selecting "Page Setup Name" and then save the drawing as a template file. Opening a new drawing with the template and selecting the Page Layout Name you created will restore all parameters.

To create the PDF, select *Plot*. Select *OK* and continue to select a filename and location for the PDF file. Select the *View PDF File* option to view the file when it is created (Figure 2.9).

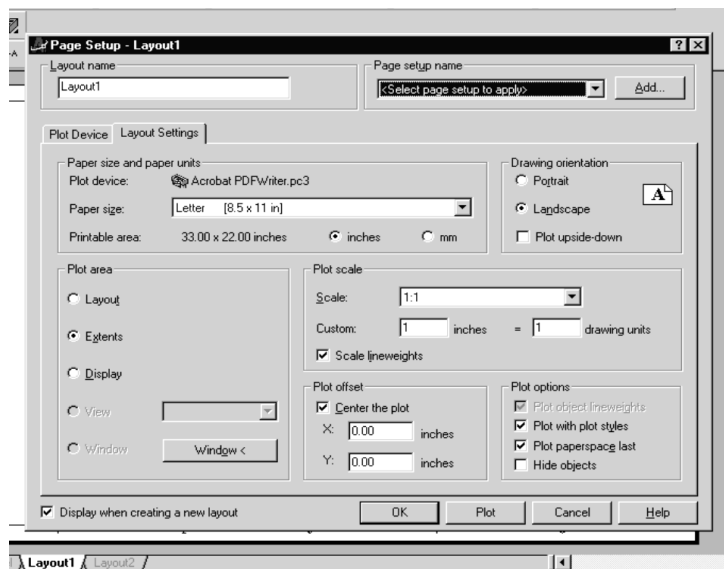


Figure 2.19





# **Specifications**

## **Creating PDFs**

## 3. Specifications: Creating PDFs

---

### 3.1 General

---

#### 3.1.1 General Discussion

These instructions have been developed for *SpecsIntact* w/ SGML version 2.9.5, *Acrobat 4.0*, and *Windows 95* OS. The process is similar for other versions of *SpecsIntact* and *NT4.0*, but not documented here. The latest version of *SpecsIntact* should be used in accordance with the Specification Preparation Manual.

#### 3.1.2 Overview

The final submittal shall include a single, searchable pdf file of the technical specification, including bookmarks of every section and thumbnails. The file shall be set to open in the bookmarks and page view. The following steps are involved with this process:

1. Create pdf files of the final specification sections in *SpecsIntact* using *Acrobat PDFWriter*. This should be done only after all 100 percent comments are incorporated, revisions executed and the Quality Review completed. See Section 3.2.
2. Edit the coversheet template called "speccoversheetAE.doc" to suit the job and create a pdf of this file from Microsoft *Word*. This template must be used to allow for electronic signature of the specification. See Section 3.3.
3. Merge pdf files of each section into one pdf file. See Section 3.4.
4. Bookmark each section. Each bookmark should, at a minimum, read "Section XXXXX," where XXXXX is the section number. Bookmarks are tabs that allow easy navigation through the file. See Section 3.5.
5. Insert the pdf files of the Coversheet, Table of Contents, Submittal Register, and other project specific files that may need to be incorporated (i.e. SK1500, Section 01580 signboards, Pile Driving Log, Environmental Sampling Report, Soil Report). Bookmark these forms and reports using a logical nomenclature. See Section 3.6.
6. Insert blankpage.pdf where needed so that sections and reports begin on an odd page number. This will allow double-sided printing from the pdf file. See Section 3.7.
7. Create all thumbnails. Thumbnails are graphical images that are useful for scanning multiple pages rapidly. See Section 3.8.
8. Set file to open with bookmarks and page view. See Section 3.9.

## 3.2 Creating Portable Document Format (PDF) files from *SpecsIntact* with SGML

To create PDF files of the specification from *SpecsIntact*: Click **Jobs**, **Printer Setup**. Scroll to the *Acrobat PDFWriter*. Click **OK**. See Figure 3.1

Select **Jobs**, **Print**. Verify all Options are set how you want them by selecting **Options**. When Finished, Click **Print**. See Figure 3.2

*SpecsIntact* generates separate print files for each section. These are sent to the `prntdata` folder of the job you are printing. *PDFWriter* takes these print files and converts them to pdf files. If you are using *SpecsIntact* w/SGML Version 2.7.3 or higher, these pdf files are saved automatically to a Pdf folder created in the `prntdata` folder of the job you are printing. The latest version of *SpecsIntact* w/SGML is available for download from:

<http://si.ksc.nasa.gov/specsintact/software/software.htm>

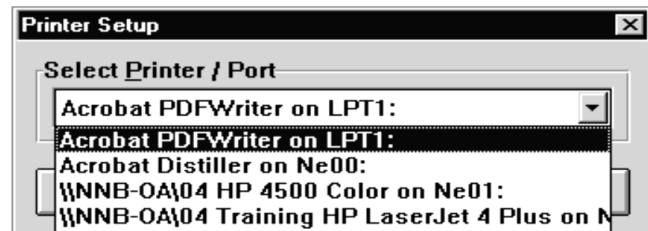


Figure 3.1

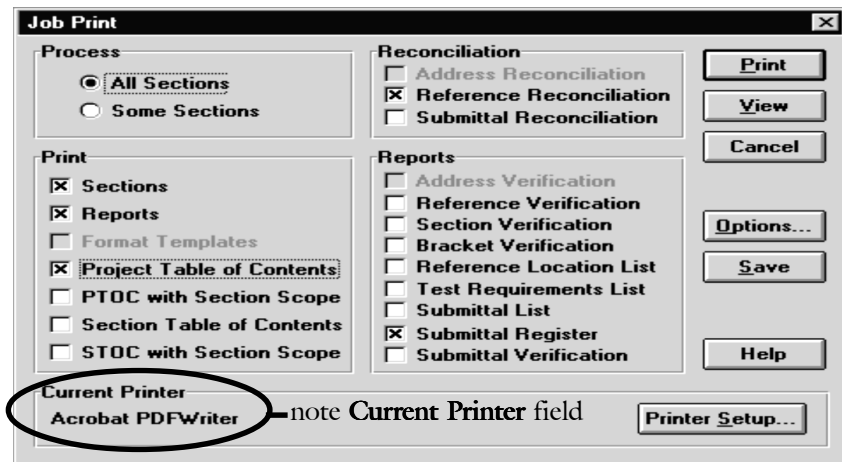


Figure 3.2

## 3.3 Coversheet for Electronic Bid Sets

The drawings and specifications will be signed electronically. To allow the signature to appear in the proper location, a standardized format for all coversheets must be used. Edit the coversheet in *Word* using the template “SpecpcoversheetAE.doc” available on the conference CD or may be downloaded from:

[http://www.efdlant.navfac.navy.mil/lantops\\_04/home.htm](http://www.efdlant.navfac.navy.mil/lantops_04/home.htm)

During editing, DO NOT move the “Specification Approval By” block at the bottom of the coversheet.

To print the coversheet to a pdf file: select **File**, **Print**. In the “Printer Name:” field, click on the drop down arrow to choose *Acrobat PDFWriter*. Click **OK**, or press **ENTER**. See Figure 3.3

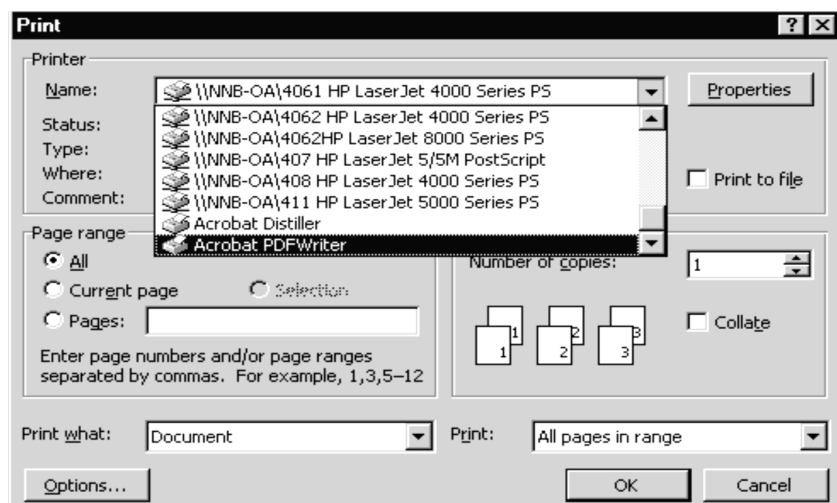


Figure 3.3

## 3.4 Assembling and Naming the Final PDF File

Refer to the assembling guidance in Section 4.1, **Assembling the Multi-Page PDF**. Save the merged pdf file using the designation described in Section 4.6.1, **EBS Filenaming Convention**.

## 3.5 Bookmarking

Bookmarks are tabs that provide a means of easily navigating through the specification. To create bookmarks: click on the Find Icon (binoculars) or Ctrl-F to open the Find tool. See figure 3.4. In the “Find What:” field, type in “Section” followed by the section number you want to bookmark. The find tool will search the text for the next place this phrase appears. When it finds the phrase where you want it bookmarked, i.e. at the beginning of each section, press Ctrl-B. See figure 3.5

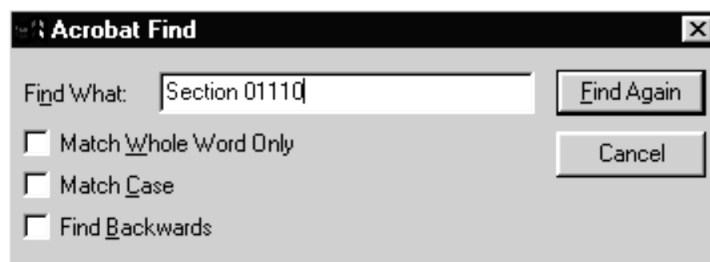


Figure 3.4

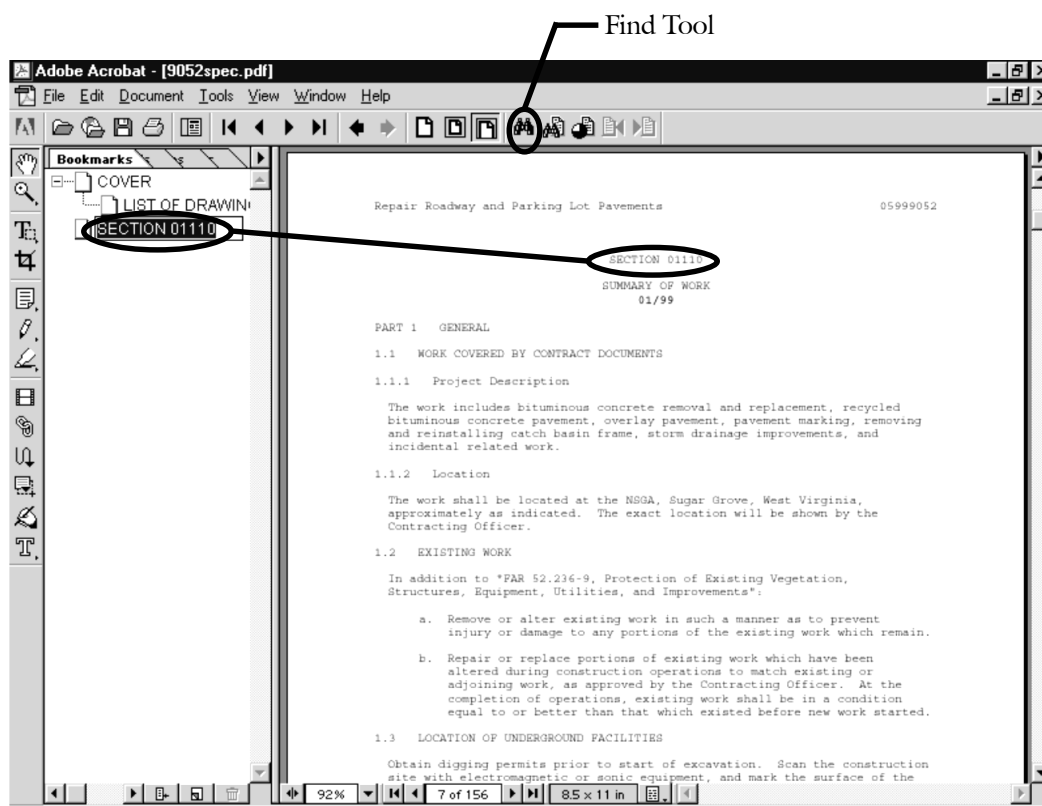


Figure 3.5

Note the phrase that we searched for is created as a bookmark when we press Ctrl-B. Continue with all sections. This will be easier if you print a hard copy of the Table of Contents before you begin. Ctrl-F is a hot key for the find feature. Ctrl-B is a hot key for the bookmarking feature.

The Find feature may run across the section referenced in places other than the beginning of that section. In this case press Ctrl-F again and click Find Again, or press ENTER. You only want to bookmark the beginning of the section.

### 3.6 Inserting PDF Files

Insert the Coversheet, Table of Contents, Submittal Register, Section 01500 SK1500, Section 01580 Signboards, the Pile Driving Log, the Environmental Sampling Report, and other applicable files. PDF files of the table of contents and submittal register are created in SpecsIntact and reside in the prntdata/pdf folder of the job. They are called “Project” and “Register”, respectively. Move to the page in the #####.spec.pdf file to the location where you want to insert the file. In this example the Submittal Register belongs before Section 01450. Click Document, Insert Pages. See Figure 3.6

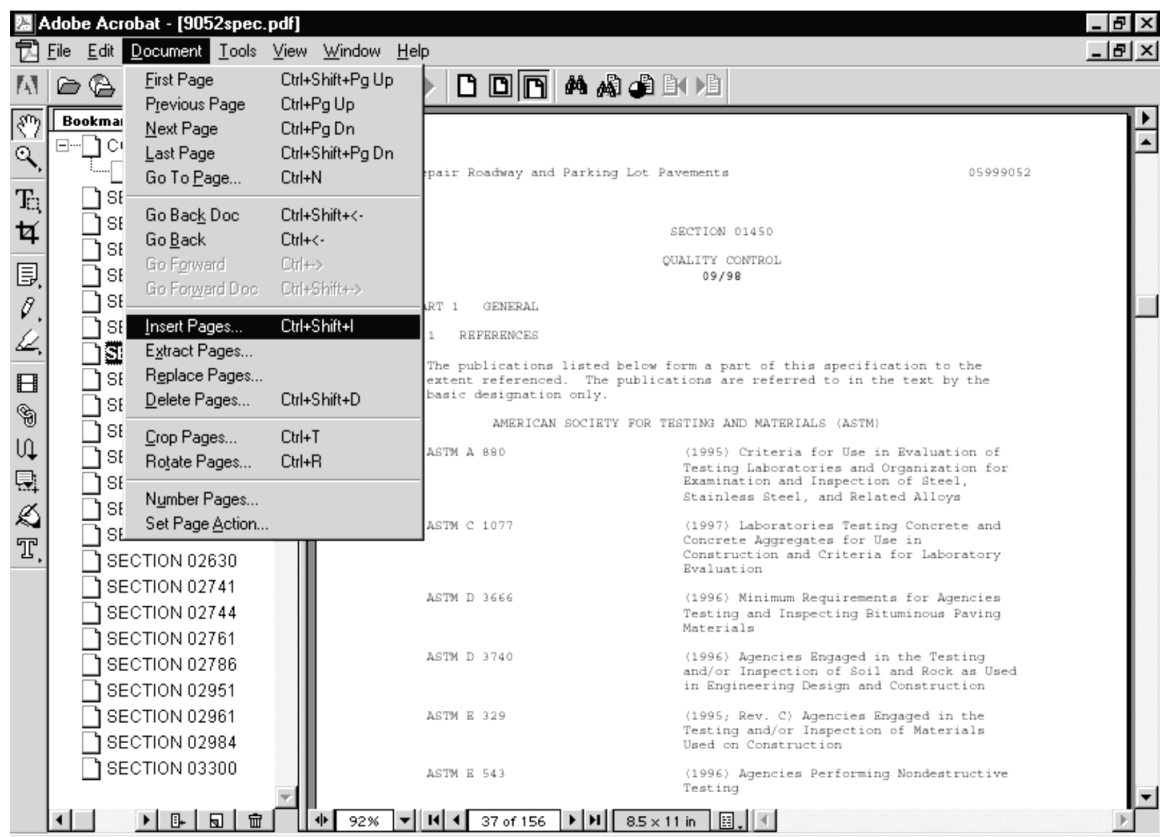


Figure 3.6

Path to where the file you want to insert is located. See figure 3.7. In this example the submittal register (REGISTER.pdf) is located in  
C:\SISGML\JOBS\0599052\PRNTDATA\PDF

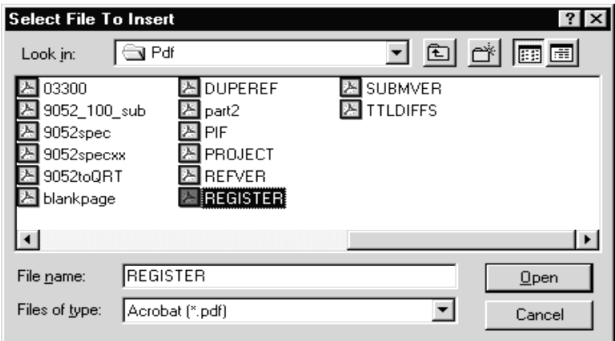


Figure 3.7

On the Insert File screen, define where you want the file inserted. See figure 3.8

Bookmark the inserted files by pressing Ctrl-B on the page you want to bookmark. An “Untitled” bookmark will appear at the bottom of the list of bookmarks. See Figure 3.9. Define the bookmark, for example, “SUBMITTAL REGISTER”.

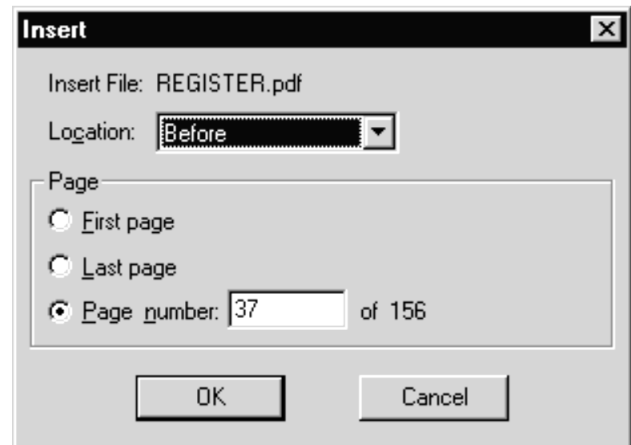


Figure 3.8

To reposition the bookmark: Point and hold the mouse button down on the bookmark box and drag it to where you want it to appear. See Figure 3.10. This should be where that page appears.

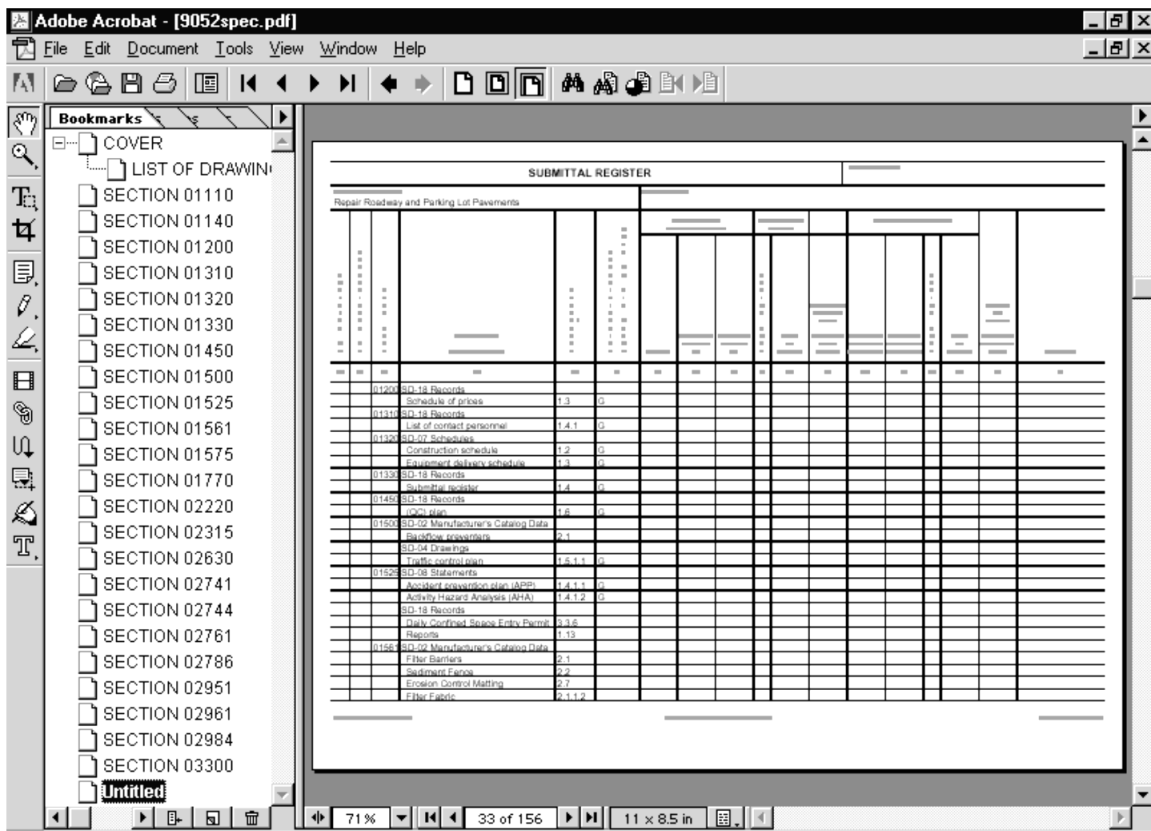


Figure 3.9

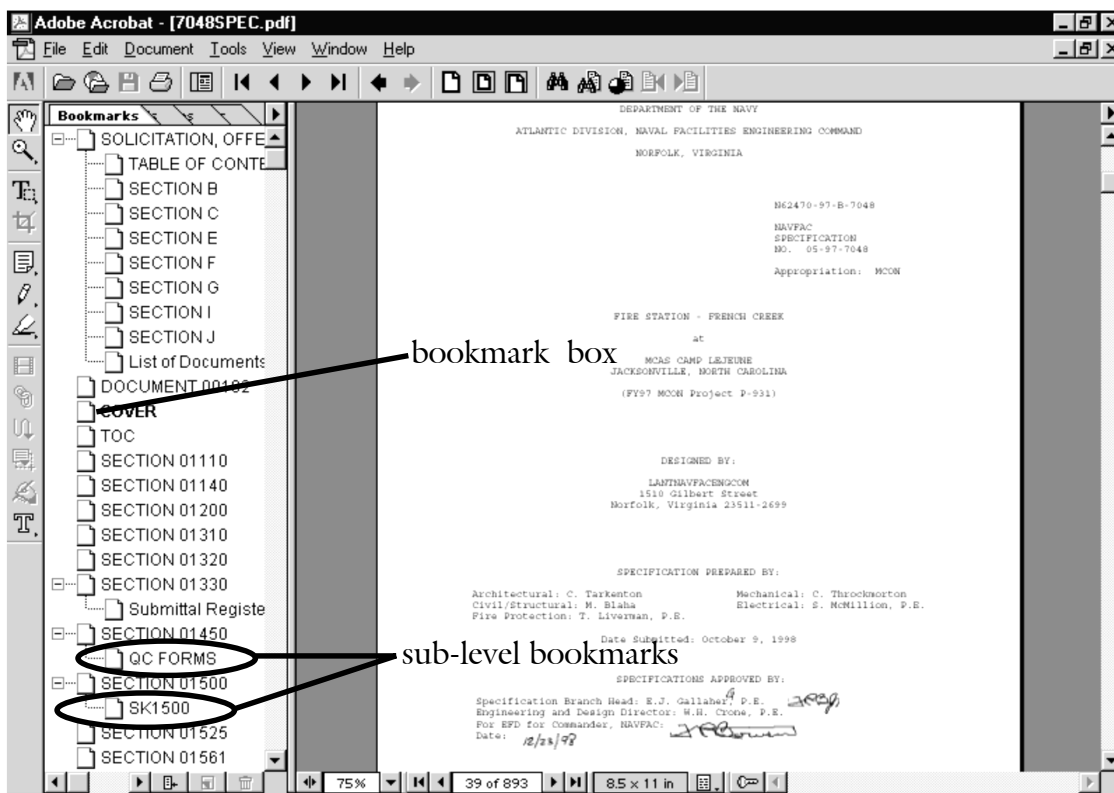


Figure 3.10

Note: bookmarks may be placed at different levels by dragging the bookmark box slightly to the right. See Figure 3.10

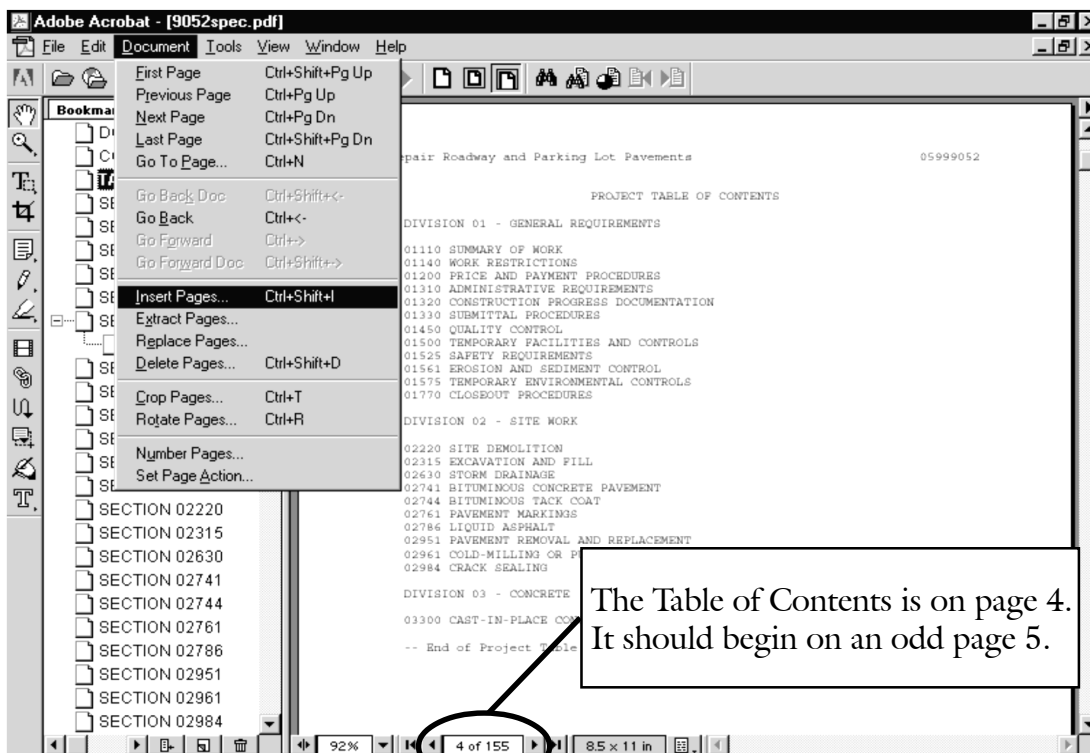


Figure 3.11



## 3.7 Inserting Blank Pages

---

To prepare the document for printing, blank pages may need to be inserted so that all sections and reports begin on the facing page, an odd page. Click on **D**ocument. **I**nsert Pages. Insert a blank page before the even page to push it to an odd page. See Figure 3.11. Blankpage.pdf is available on the conference CD or may be downloaded from:

[<http://www.efdlant.navy.mil/lantops\\_04/ebs.htm>](http://www.efdlant.navy.mil/lantops_04/ebs.htm)

## 3.8 Creating Thumbnails

---

Thumbnails are graphical representations of each page that are useful for scanning multiple pages rapidly. Refer to Section 4.2, **To Create Thumbnails**, for guidance on creating thumbnails. Thumbnails should be created after all pages have been added.

## 3.9 File Features

---

The final pdf file should be set to open-up in the bookmarks and page view. Select **F**ile, Document **I**nfo, **O**pen. Click on “Bookmarks and Page” in the Initial View area.

Save the file using “Save As” with the Optimize feature on (see Section 4.6, **Saving and Setting Properties**).

## 3.10 Record Documents

---

Submit the “#####spc.pdf” file on the deliverable CD in accordance with Section 6, **Electronic Deliverables: Media and Format**.

# **Assembling Final PDFs**

## 4. Assembling Final PDFs: For Publication in Acrobat

*These instructions will provide information on how to assemble multi-page PDF's from separate PDF files, how to book mark pages, and how to add, delete, and reorganize these pages and bookmarks. Additional information is provided regarding setting opening appearance properties and other items relevant in the file saving process when the final PDF is complete. These instructions are similar for and apply to both drawing and specification PDF's.*

### 4.1 Assembling The Multi-Page PDF

#### 4.1.1 View and Layout

Typically you will have created all your PDFs by now. The goal is to produce two PDF files; a single merged drawing PDF and specification PDF. Select or copy one PDF of the single PDFs over to be your master file. Rename it as required in Section 4.6.1. Open this file in *Acrobat*. *Acrobat* has three main views: Standard, Bookmark, and Thumbnail. Look to the left margin to determine which view you are in. In the *Windows* pull down menu you'll see options to show/hide thumbnails or use the icon/tabs on the toolbar.

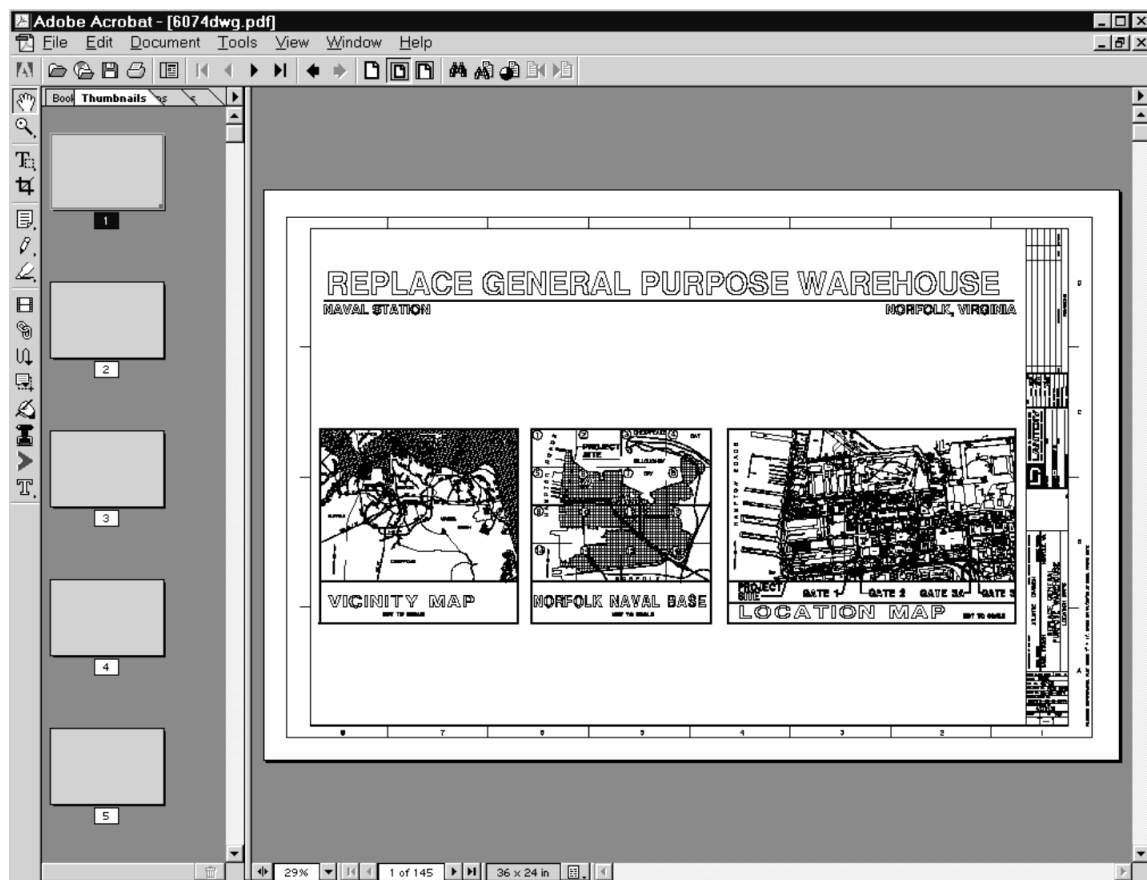


Figure 4.1  
(This figure depicts a PDF with additional sheets already inserted)

Figure 4.1 shows a PDF viewed in the thumbnail mode. Choose this mode when inserting pages. The vertical line between the thumbnails and sheet view can be adjusted by dragging to widen the area(See Figure 4.4). If you see gray boxes in place of the thumbnails, you need to create them. See Creating Thumbnails below. You can do this later after all sheets have been inserted.

### 4.1.2 Merging Separate PDF Files Using *Adobe Insert Command*

Navigate to the page in the single master PDF where you wish to insert new pages. From the *Document* menu, select *Insert Pages*. You will see a dialog box prompting you for the filename of the PDF you wish to incorporate. (See Figure 4.2) Find your file. Next you will see a screen prompting you to verify the new position of the pages to be inserted (See Figure 4.3). You will need to provide information for proper placement. The new pages will be appear as gray thumbnails if you have not already created them. Repeat these instructions until you have inserted all individual or multi-page PDF pages as required.

**Recommendation** You might want to require each discipline (or other sub-group component) to prepare their own multi-page PDF for their respective work so as to reduce the workload required during the final integration of other disciplines. This applies for the bookmarking process (see Section 4.5) as well.

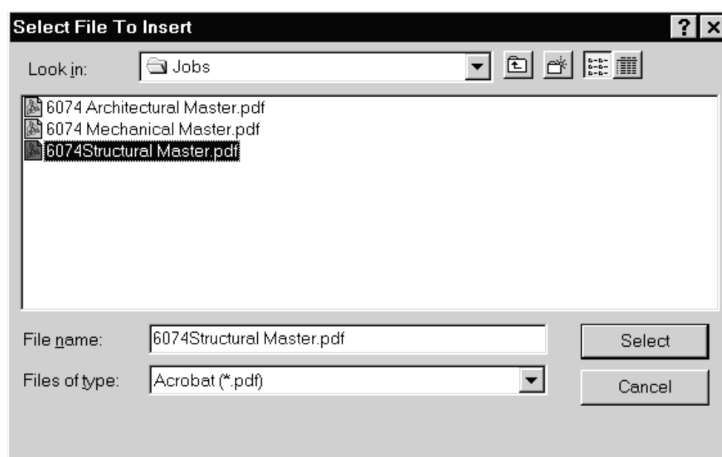


Figure 4.2

### 4.1.3 Merging Multiple PDF Files

Merging multiple pdf files involves dragging the files from Explore into an open Adobe Acrobat file. This involves having two windows open simultaneously, one for Explore and one for Adobe Acrobat. In Adobe Acrobat, open the file which you want to insert files into. In the Explore window, path to where the pdf files you want to insert are saved. Left click on the first file in the series and beginning with that file hold both the “Shift” key and “down arrow” key to scroll to the last file. After you have scrolled to the last file, release the “Shift” and “down key” and with your mouse scroll up to the first file you picked. Click on that file and drag the entire block of files into the Adobe Acrobat window (See Figure 4.4). A box with a plus sign will appear when you drag into the Acrobat field, release the mouse button when you see it.

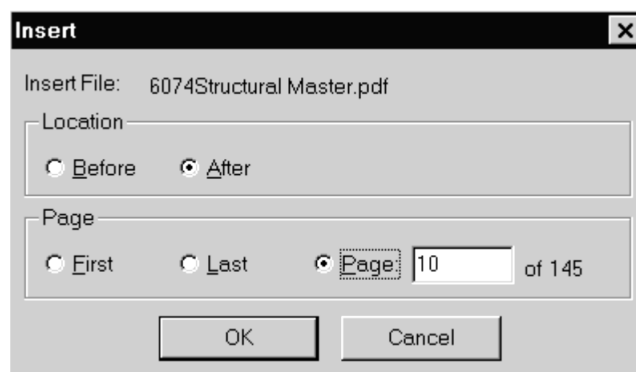


Figure 4.3

**CAUTION** The files will be brought over in the order that they appear in the block of files that you dragged. In other words the files will be loaded into the main pdf file in the order they appear in Explore. This is important to note since the names of the files typically determine their order in the explore window (typical when the sort is by the name column). Once the block of files is highlighted in Explore, it is crucial that the block be dragged by the first file selected, in order to ensure that the order is maintained.

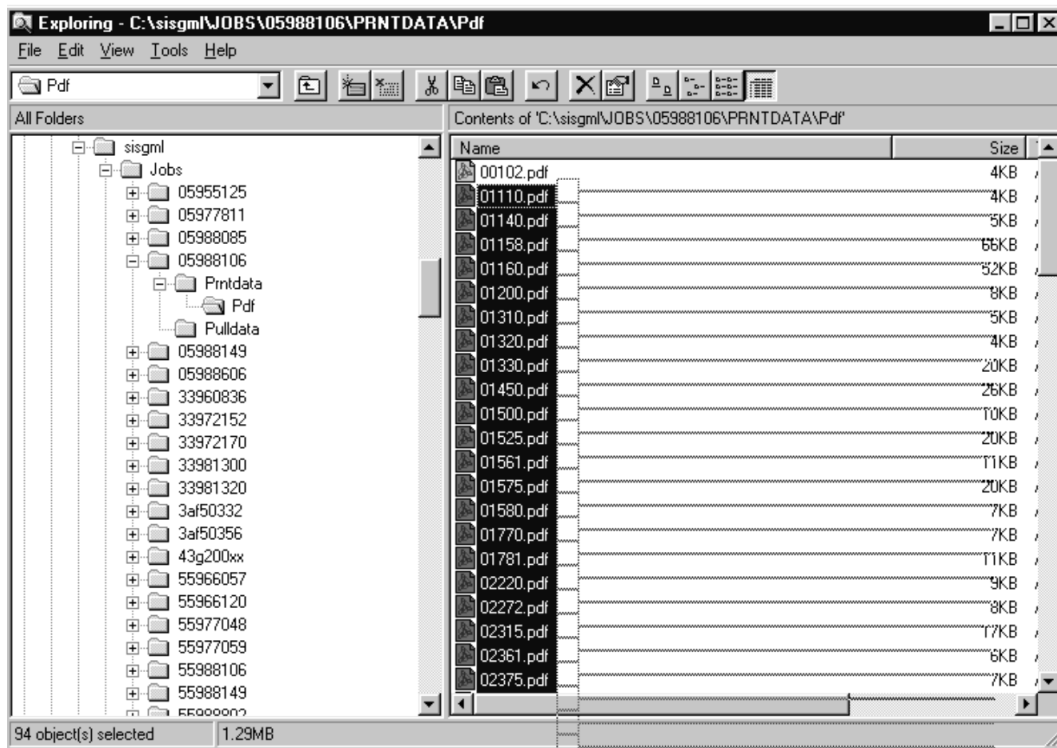


Figure 4.4

An *Insert* box, similar to Figure 4.3, will prompt you to verify where you want to insert the block of files.

## 4.2 To Create Thumbnails

1. Click the Thumbnails tab in the navigation pane to bring the Thumbnails palette to the front.
2. Choose Create All Thumbnails from the Thumbnails palette menu to create thumbnails for all document pages. One thumbnail is generated per page.
3. Choose Small Thumbnails from the Thumbnails palette menu to view thumbnails at approximately one-half the default size (38 x 48 pixels). To toggle the view back to the default size (76 x 98 pixels), choose Large Thumbnails from the palette menu (right click).

## 4.3 Repositioning Sheets Within a Master PDF

Several options are available for this task. Switch to the thumbnail view and widen the vertical bar between the thumbnails and sheet view by dragging the bar. Click the thumbnail of the drawing you want to select. Drag it to its new position. A vertical blue bar will guide you on where to drop it between thumbnails. See Figure 4.5.

## 4.4 Deleting/Extracting/Replacing Pages in the Master PDF

All these options are available under the “Document” pull down window. Most are self-guiding. Alternatively, you can select the thumbnails you want to manipulate (using CTRL-click or Shift-click) and then right-clicking for options. Keep in mind that if you use any of these, you should go back and check any corresponding bookmarks, their associated views, and thumbnails to make sure you get what you want.

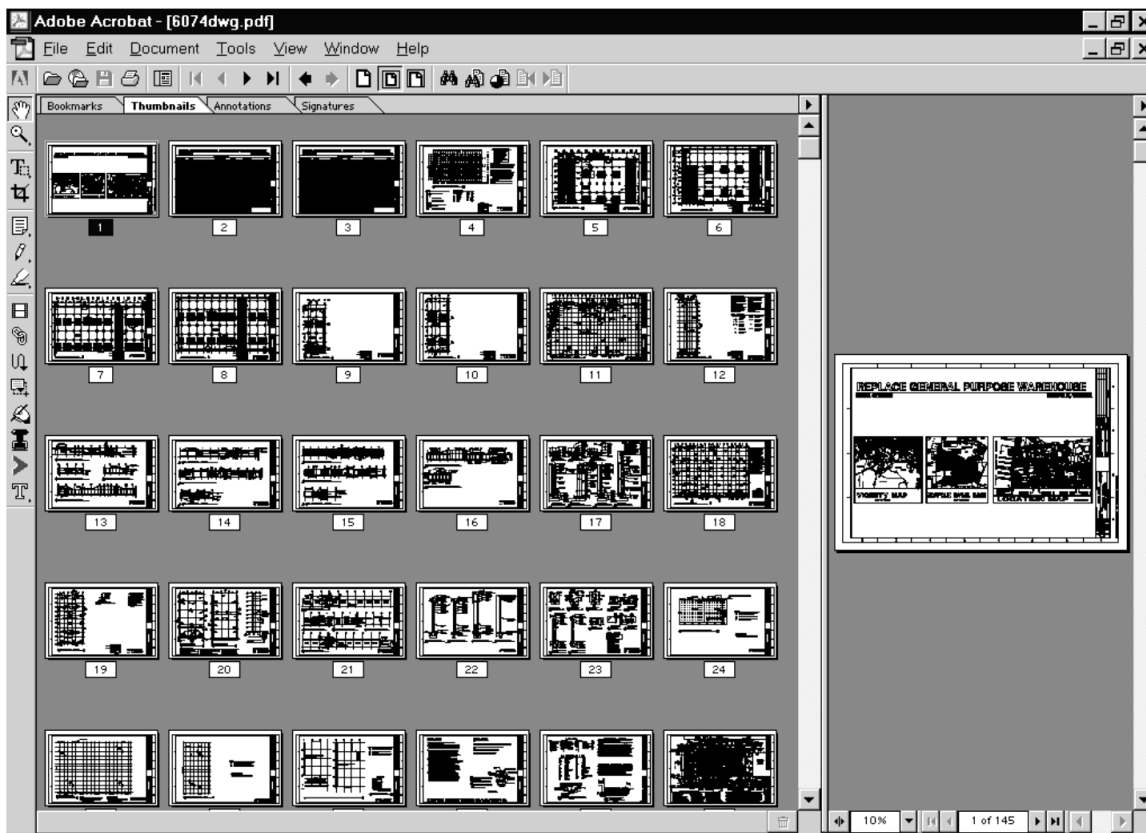


Figure 4.5

## 4.5 Bookmarking

Switch to the bookmark view. At this point you will not see any bookmarks unless you inserted a file that already had them. It is important to understand that bookmarks are simply links or shortcuts to a view of a sheet that is already in your multi-page PDF. Bookmarks can be in any order but should follow the sequence of the sheet order for our EBS use.

### 4.5.1 To create a new bookmark in the current document:

1. Click the Bookmarks tab in the navigation pane to bring the Bookmarks palette to the front.
2. Click the bookmark under which you want to place the new bookmark. If you don't select a bookmark, the new bookmark is automatically added at the end of the list.
3. Use the Next Page and Previous Page arrows on the command bar to navigate to the destination in the PDF document to which you want the bookmark to link.
4. Be aware of the magnification of the view you are working with. The bookmark will retain the magnification of your current view when you bookmark it.
5. Choose New Bookmark from the Bookmarks palette menu (right click), or select the new bookmark icon at the bottom of the Bookmarks palette. You can also hit CTRL-B.
6. Type in the text for the bookmark label, and press *Enter*. Bookmark labels can be up to 128 characters long.
7. To make sure the correct location and magnification are set, go to another page in the document, and then test the bookmark.
8. Be aware of the location of the vertical bar between the bookmarks and your view. When you save your file, this bar will be saved wherever it is and will reappear in the same location the next time the PDF is opened. Try not to make the bookmark window wider than about 2 inches, or else, the drawing view will be small. The end user will be able to shift this bar as necessary.

See Sections 1.1 and 3.1 for proper arrangement of bookmarks for EBS. See Figure 4.6 for a sample arrangement of bookmarks for plans. The +/- sign next to some bookmarks indicates that it has sub-bookmarks nested below it. You can collapse/open the sub-bookmarks by clicking on the sign.

## 4.5.2 Deleting/Moving/Editing Bookmarks

**Important** Remember that moving bookmarks does not move the actual sheet location in the PDF.

### To edit a bookmark:

1. To edit a bookmark name, select the bookmark, click inside the text box, and type in the new text.
2. To edit a bookmark destination, select the bookmark, and then (in the document pane) move to the location you want to specify as the new destination.
3. Adjust the magnification. For more information, see Setting magnification options in *Acrobat Help*.
4. Choose Set Bookmark Destination from the Bookmarks palette menu, and click Yes in the warning dialog box.

The bookmark is now set to the new location.

### To delete a bookmark:

1. Select the bookmark you want to delete, or Shift-click to select a range of bookmarks. Ctrl-click to toggle the selection of individual bookmarks.
2. Choose Edit > Delete, and then click OK.

**Important** Deleting a bookmark deletes any bookmarks that are subordinate to it (children); deleting a bookmark does not delete any document text. Deleting a bookmark does not delete the corresponding sheet.

### To move a bookmark:

1. Select the bookmark icon you want to move, or Shift-click to select a range of bookmarks. Ctrl-click to toggle the selection of individual bookmarks.
2. Drag the icon(s) up/down or to the left/right, positioning the black bar directly under the parent bookmark.
3. Click OK.

## 4.5.3 Bookmarking Shortcuts for Specs (See Section 3.5)

## 4.5.4 Bookmarking Naming Convention

**Specs** Bookmark each section. Each bookmark should, at a minimum, read “Section XXXXX,” where XXXXX is the section number. Bookmarks are tabs that allow easy navigation through the file. See Section 3.5.

**Drawings** A bookmark should be created for the beginning of each drawing discipline. Sub-bookmarks should be created for individual drawing sheets. Bookmark wording should include, as a minimum, drawing sheet number (original, revised, or amended) and be as descriptive as practical (i.e., S-1 Foundation Plan). See Figure 4.6.

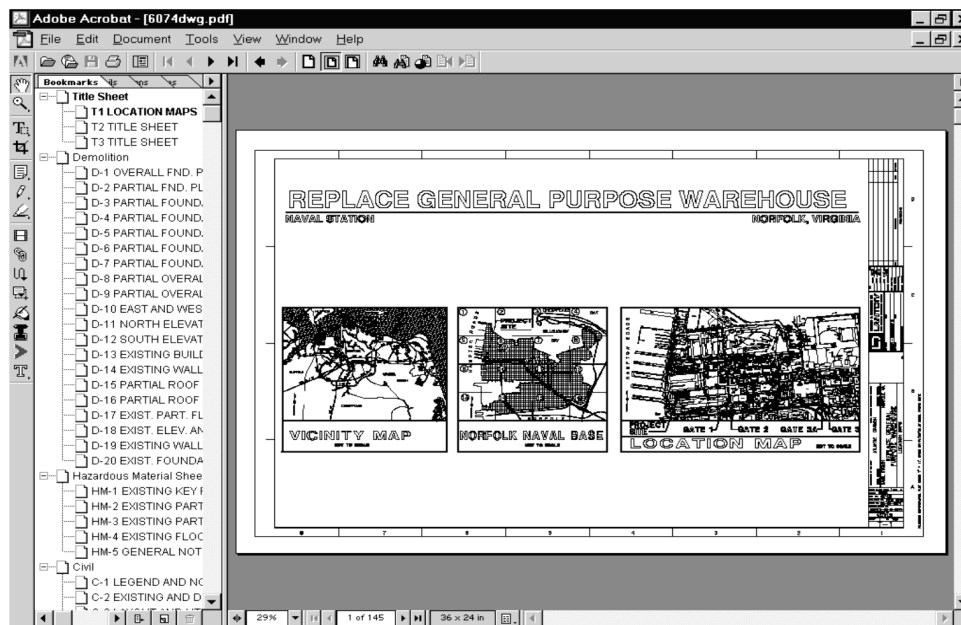


Figure 4.6

## 4.6 Saving and Setting Properties in PDF's

### 4.6.1 EBS Filenaming Convention

Filenames for single master multi-sheet pdf's for plans, specifications and reference files will follow this convention which includes 8 characters with a .pdf extension:

**Drawings:**       # # # # # dwg.pdf  
**Specifications:** # # # # # spc.pdf  
**Reference:**     # # # # # ref.pdf

**Drawings (Amendments):**   # # # # # dw\*.pdf  
**Specifications (Amendments):** # # # # # sp\*.pdf  
 \* denotes amendment number

The first # character shall indicate the decade of the project's funding year. The next 4 # characters shall be the last four characters of the proposed construction contract number. (This is not the same as your A/E contract number.) The next characters shall be as shown above for the respective document type.

**Sample Drawing filename: 06074dwg.pdf**

This indicates an FY 2000 project with construction contract number ending in 6074 that contains drawings.

If for some reason this naming convention cannot work for your particular project, please contact your lead government designer (EIC/AIC) for your project for resolution.

### 4.6.2 General Properties

There are a variety of properties that can be set in the PDF to control how your PDF will appear when another individual opens it. Following are some relevant items that get controlled by the way you save the final PDF file:

1. Opening View Mode (Standard, Bookmark, or Thumbnail)
2. Opening Magnification and Page
3. Width of Bookmark View Pane
4. File Size/Compression Properties
5. Password Protection and other Security Controls



When complete, save and close your PDF. Re-open it. Your initial view should be similar to Figure 4.6.

### 4.6.3 Opening View Mode (Standard, Bookmark, or Thumbnail)

Desired final opening mode for EBS documents is to have the PDF open to the BOOKMARK Mode, with the first sheet of the PDF file displayed in FIT IN WINDOW. These settings are controlled under the File/Document Info/Open pull down menus.

Adjust the settings as shown in Figure 4.7.

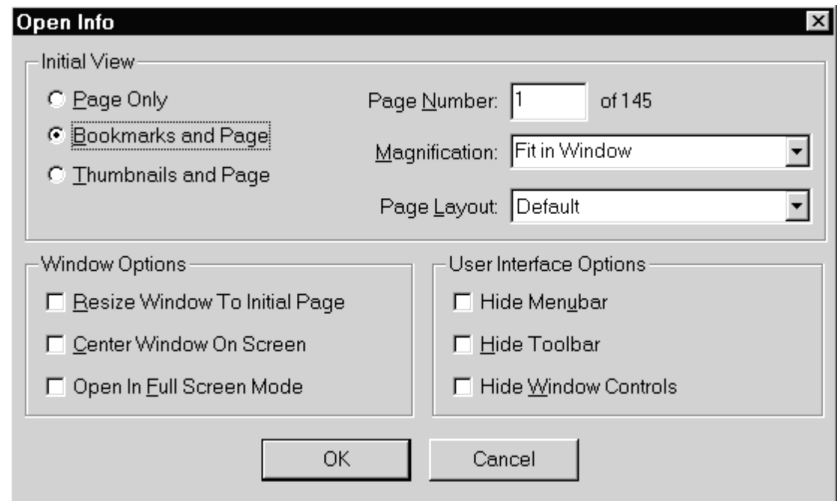


Figure 4.7

### 4.6.4 Width of Bookmark View Pane

Set the width on screen to a reasonable width trying to maximize the size of the document. The user can then adjust it to their liking. You can adjust the width by clicking, holding, and dragging the vertical separation bar between the panes of the bookmarks and document. Anticipate that most users would be working at 1024x768 resolution. The final PDF bookmark width will be set to the width adjusted prior to saving the file. Try to remember if you come back later and make other corrections to reset the width to the desired width.

### 4.6.5 File Size/Compression Properties

When saving a PDF, various options can be selected to control final file size. Instead of executing a file/save command, select the file/save as command. This prompts you with the following dialog box instead of just saving the file. See Figure 4.8.

Here you have the opportunity to change your file name or to select the OPTIMIZE checkbox. Selecting Optimize will compress the file to the maximum extent possible. Any reduction in file size relates to the amount of repetition in your document. “Zipping” PDF files with software such as WinZip offers little or no benefit if your file has been optimized.

**WARNING** Depending on your total file size, optimizing can take a tremendous amount of time and should only be selected prior to final submittal. **DO NOT OPTIMIZE A FILE AFTER IT HAS BEEN ELECTRONICALLY SIGNED!**

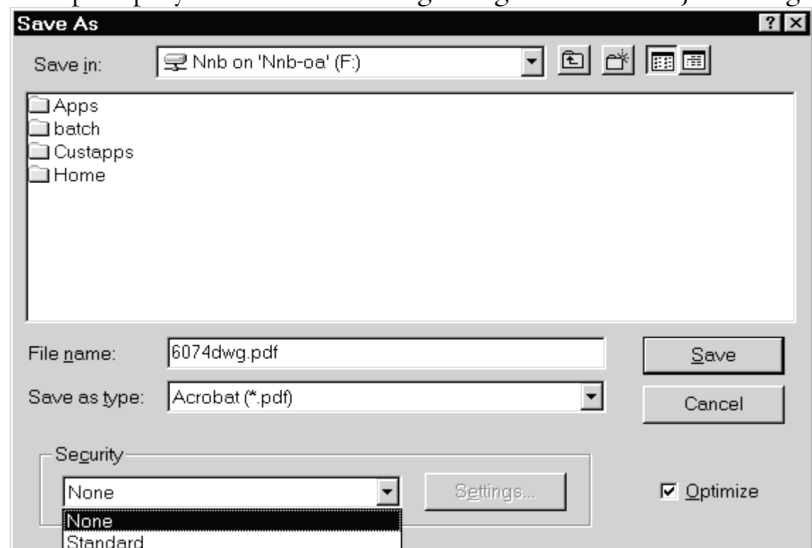


Figure 4.8

## 4.7 Incorporating Reference Documents

### 4.7.1 General

Need may arise to incorporate existing reference documents into the final EBS. These documents may be letter size or larger drawing size. They may take the form of reference reports, forms, etc. in the specification or a set of existing reference drawings. Every effort should be made to create directly converted PDF's of the reference documents from the original electronic files. However, if they are not available, scanning will be required.

### 4.7.2 Separate Reference PDF File

It is permissible to insert reference documents into the specification only prior to electronic signature. This will not harm the ability to later authenticate a specification signature. However, due to the complexity of the signature process for new design drawings, it is not acceptable to insert reference drawings into the new project drawing PDF file. Instead, a separate multi-sheet reference drawing file should be assembled. This should be provided as a supplementary PDF file with filename using the xxxxxref.pdf naming convention. (See naming PDF's convention in Section 4.6.1)

### 4.7.3 Scanning Criteria

Documents should be scanned at their full size into TIFF format. The scans should be performed at 200 dpi, black and white (not in grayscale or color). The TIFF's should then be inserted or converted to PDF format using the File/Import/Image command (See Figure 4.9) or other means. The source TIFF files should also be submitted on the final CD in the appropriate directory. (See Section 6). If a scanning method is used that bypasses the TIFF file create and goes directly to PDF, the TIFF files are not required to be submitted.

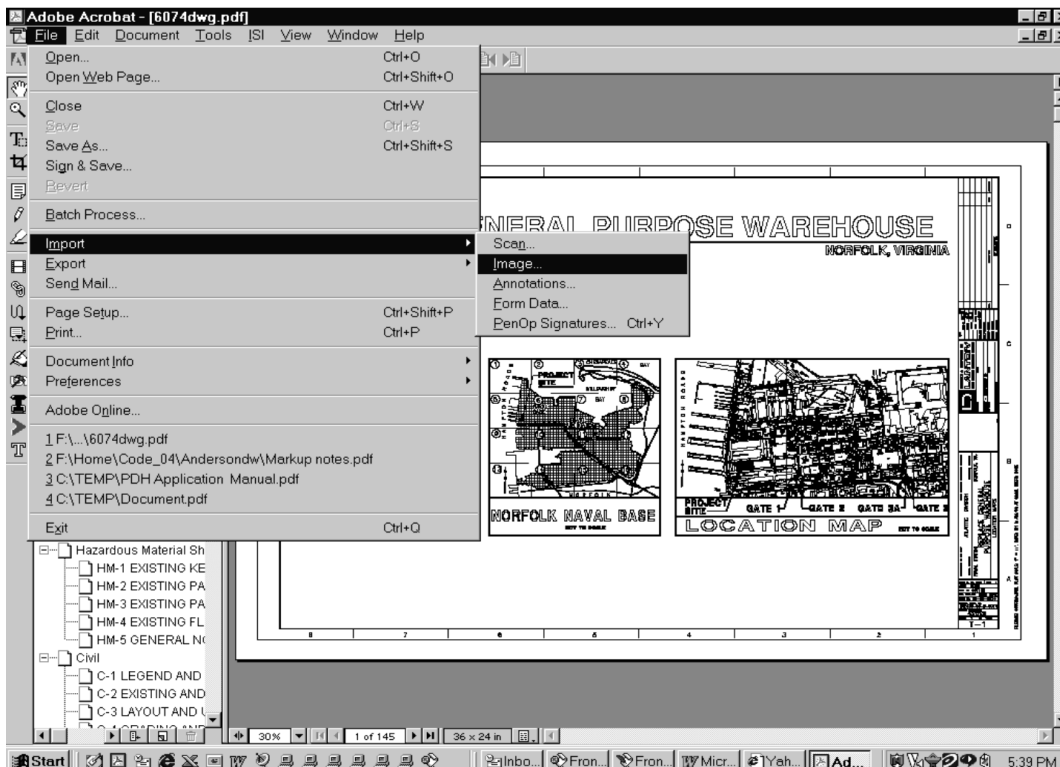


Figure 4.9

### 4.7.4 Reference PDF File Enhancements

Once the scanned images are inserted, all PDF enhancements and tools including thumbnails, bookmarking, etc. are available and should be performed in accordance with appropriate sections of this manual.



# ***DeSign***

## **Signature Software**

## 5. DeSign Signature Software

### 5.1 Installation

#### 5.1.1 Install PenOp Software

*PenOp Signature* and *PenOp Adobe Acrobat Plug-In* should be installed as noted in the *PenOp* software manuals. Note that *DeSign* does not currently support the use of a signature database so installation of *PenOp Signature Book* is not required. *DeSign* was designed and tested using *PenOp Signature v. 3.1* or higher, *PenOp Adobe Acrobat Plug-In v. 1.55* or higher, and *Windows 95/NT*.

#### 5.1.2 Install DeSign

The *DeSign* installation files are contained on the EBS CD or web site. To begin the installation, select and execute the “setup.exe” file. This will start the installation utility. Figure 5.1 will appear.

Close any applications to insure that setup proceeds properly, then select OK. The installation program then prompts for the directory in which to install *DeSign*. The default is the typical *Windows* Program Files directory under *DeSign*. If another directory is desired, select “Change Directory” and select the new destination directory. Once the installation directory is correct, click on the large computer icon button to install *DeSign* in the specified destination directory (see Figure 5.2).

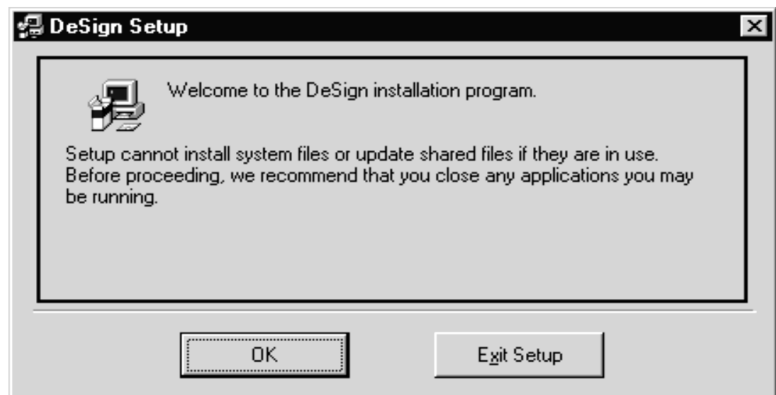


Figure 5.1

#### 5.1.3 Configure DeSign

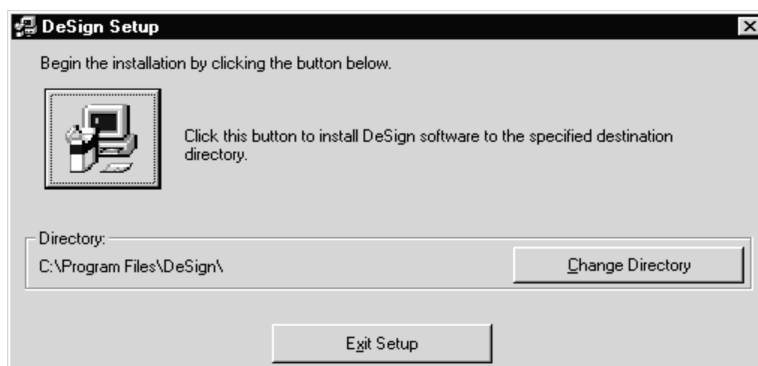


Figure 5.2

Once *DeSign* is installed, it may be executed from the Program menu in Microsoft *Windows*. (A shortcut can also be created using standard *Windows* techniques). When *DeSign* is started for the first time the program will contain generic configuration information. A configuration feature was added to avoid entering specific user information repeatedly.

To enter specific user information, start *DeSign* as directed in Section 5.2 of this manual. When prompted for the type of file, select CANCEL. The configuration is entered by selecting the *Tools...Options* menu. The *Options* menu is then displayed as illustrated in Figure 5.3.

The “User Name” is the default signatory name that will appear when signing. If one user will be the main signatory on a given installation, then that name should be entered as the default signatory. This default will appear during the application of a signature, but can be changed at that time or by editing the configuration.

The “Drawing and Specification Sign Positions” are the default positions that the default user typically signs a document. The default positions can be overridden during the application of a signature or by editing the configuration.

The “File Open Directory” is the default directory that *DeSign* will open when the user desires to open a new file. The configuration can be updated at any time by accessing the *Tools ... Options* menu.

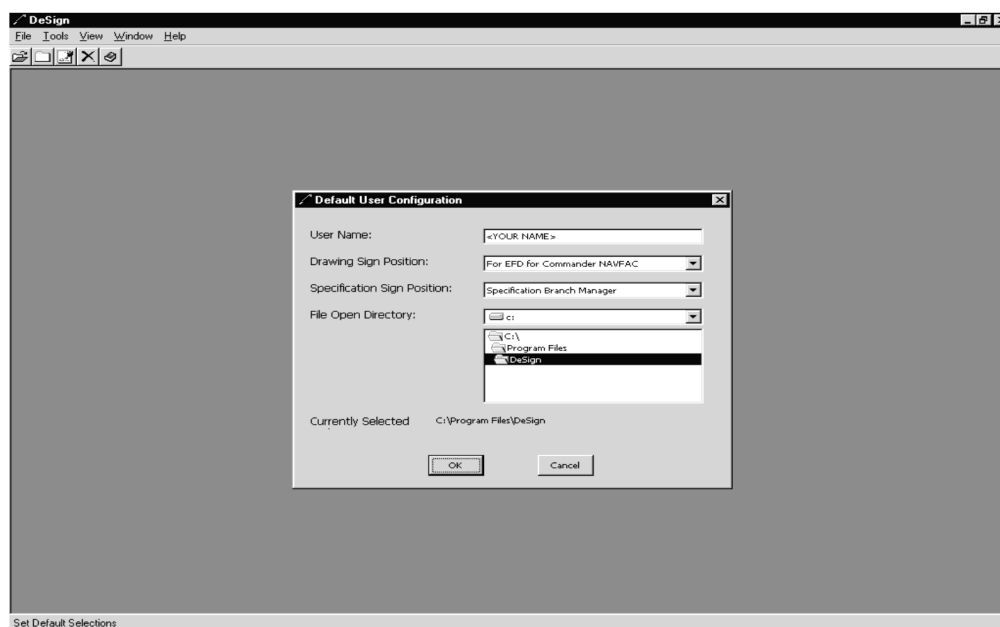


Figure 5.3

## 5.2 General Instructions

---

### 5.2.1 Process

*DeSign* signature software should be utilized within an approval process as outlined in Section 1.3.1.

### 5.2.2 Startup

During the installation of the program, a menu item is automatically created in *Windows*. *DeSign* can be started from the *Windows* Start Menu under *Programs...DeSign*. Additionally a shortcut can be created so that an icon is available on the desktop. Selecting the menu item or executing a shortcut will start the program.

### 5.2.3 Select File Type

When the program is first started and anytime the user chooses to open a new project file, the Select File Type Window is displayed as shown in Figure 5.4.

At this window, the user is prompted to select whether they are going to be signing a drawing or specification file. The program will automatically verify the page size of the file to insure the document is of proper size. If the document does not conform to a 22" X 33" drawing or 8.5"x11" specification, an error message will be generated and the user will be prompted to select a different file of the proper format or continue and verify the sheets in question are acceptable to sign. Once the type of file is selected, press OK to open the file dialog.

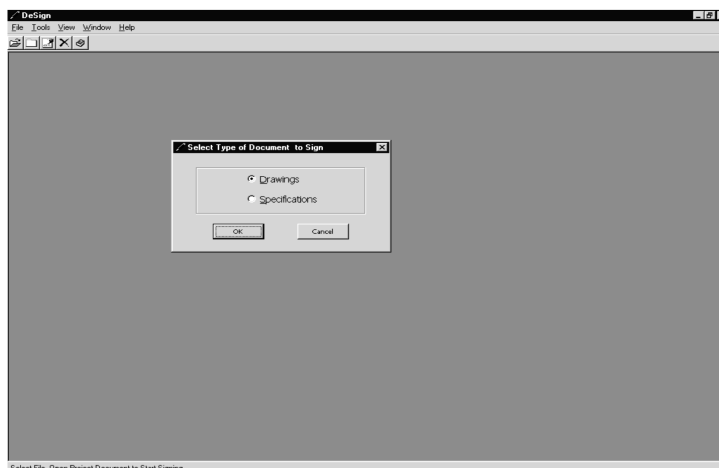


Figure 5.4

### 5.2.4 Open File Dialog

The file dialog is illustrated in Figure 5.5. The “default” directory is displayed when the file open dialog is originally displayed. (See Section 5.1.3 for further information concerning setup of default properties.) If another directory is used other than the default, the new directory will be the default until the project is restarted or the configuration is changed.

Select the PDF file to be opened and select the Open Button. Pressing Cancel will return the user to the Select File Type Window.

An example of an open PDF file is provided in Figure 5.6. The user should next determine which range of pages they wish to sign by reviewing the pages of the specification or drawings.

The PDF file is opened in Page Fit mode with bookmarks shown. Notice that the *Adobe Acrobat* toolbar appears below the *DeSign* toolbar. All of the tools on the *Acrobat* toolbar can be executed from within *DeSign*, including the print

function should you desire to print a page of the file. We recommend that you **DO NOT** select to print numerous signed pages from *DeSign* since the security will require all of the pages to be verified prior to printing. Depending on the number of pages selected and the number of signatures, this process could take a number of minutes. If the authenticity of the file is not in question, the file should be printed from *Adobe Acrobat Reader* or a machine that does not have *PenOp* installed. When Reader is used, the signatures are not verified and the file prints as a normal PDF file. Another method to print signed PDFs without executing the signature verification is to use *Adobe Acrobat* without loading the software plug-ins. This is done by executing *Adobe Acrobat* while holding down the Shift key. None of the plug-ins will load including the *PenOp Adobe Acrobat Plug-In*. Printing can then be done without the delay due to signature verification.

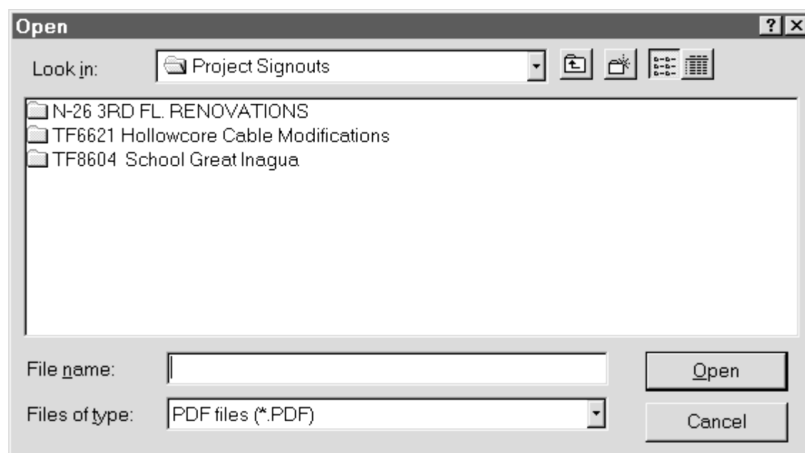


Figure 5.5

When determining the page range to sign, be careful to recognize the possible differences between PDF page numbers and the contract sheet count numbers on the actual sheets. The diagram in Figure 5.7 illustrates how the two can differ. This often occurs on drawing sets that have intentionally omitted or blank sheets. Although this example was created to exaggerate the difference, please note that *DeSign* recognizes the PDF page numbers only, not the page number that appears on the actual sheet.

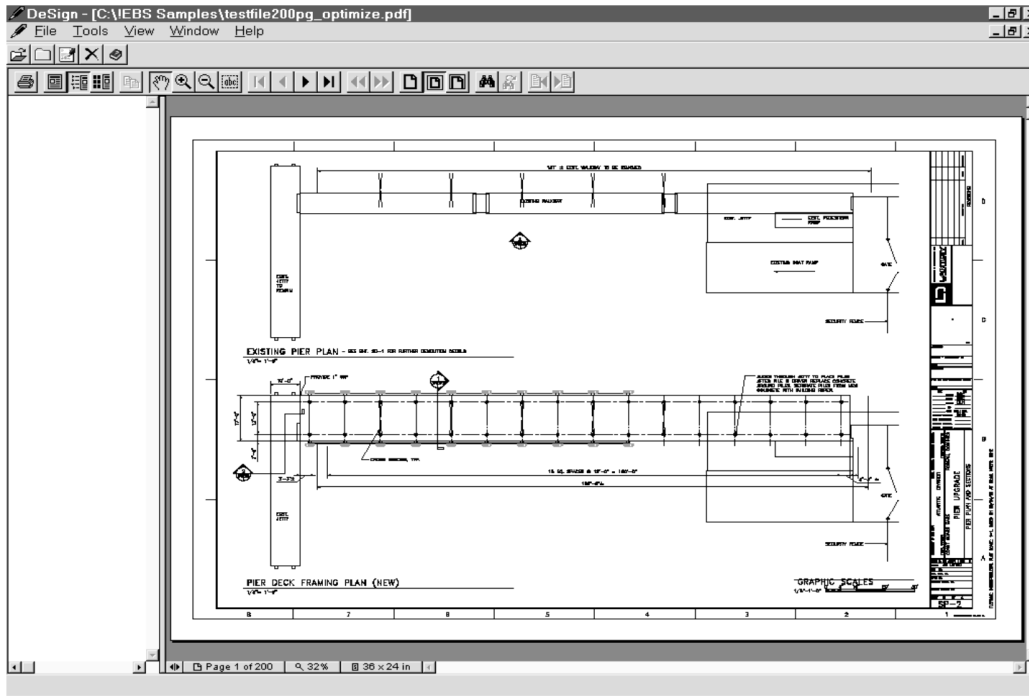


Figure 5.6

Once the range of pages to sign is determined, it is time to sign the document.

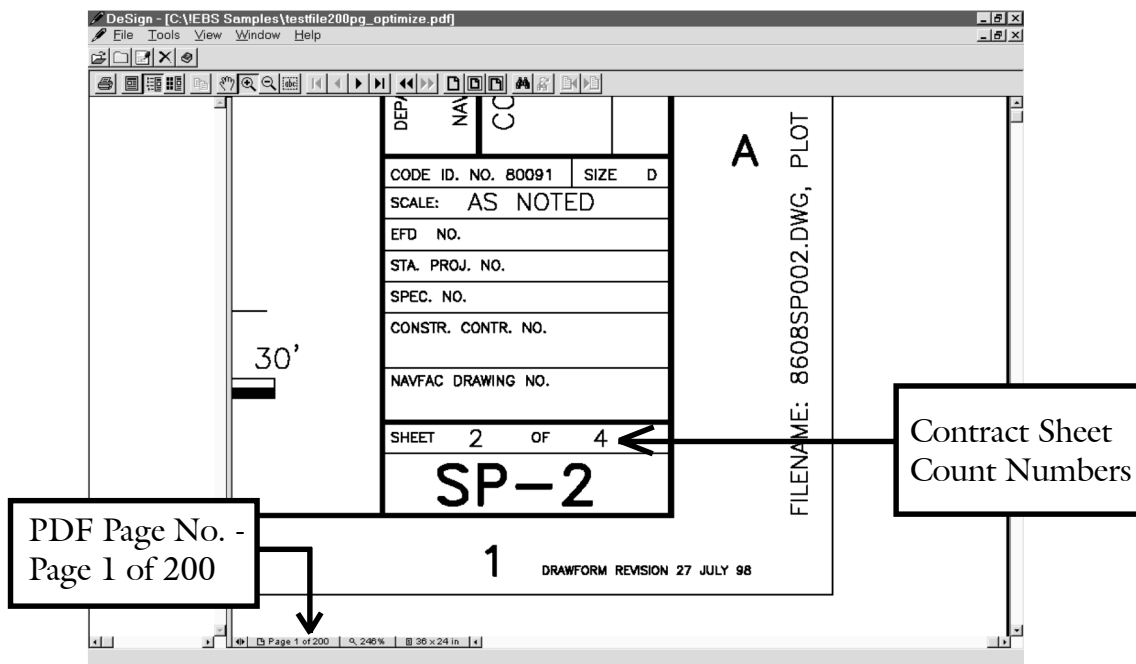


Figure 5.7



## 5.2.5 Sign Document

The Sign Document feature can be executed from the Tools... menu or executed from the toolbar by selecting the icon representing a piece of paper and a pen. When executed, the “Sign Document” window is displayed as shown in Figure 5.8. (The toolbar button to sign a document is denoted in Figure 5.8)

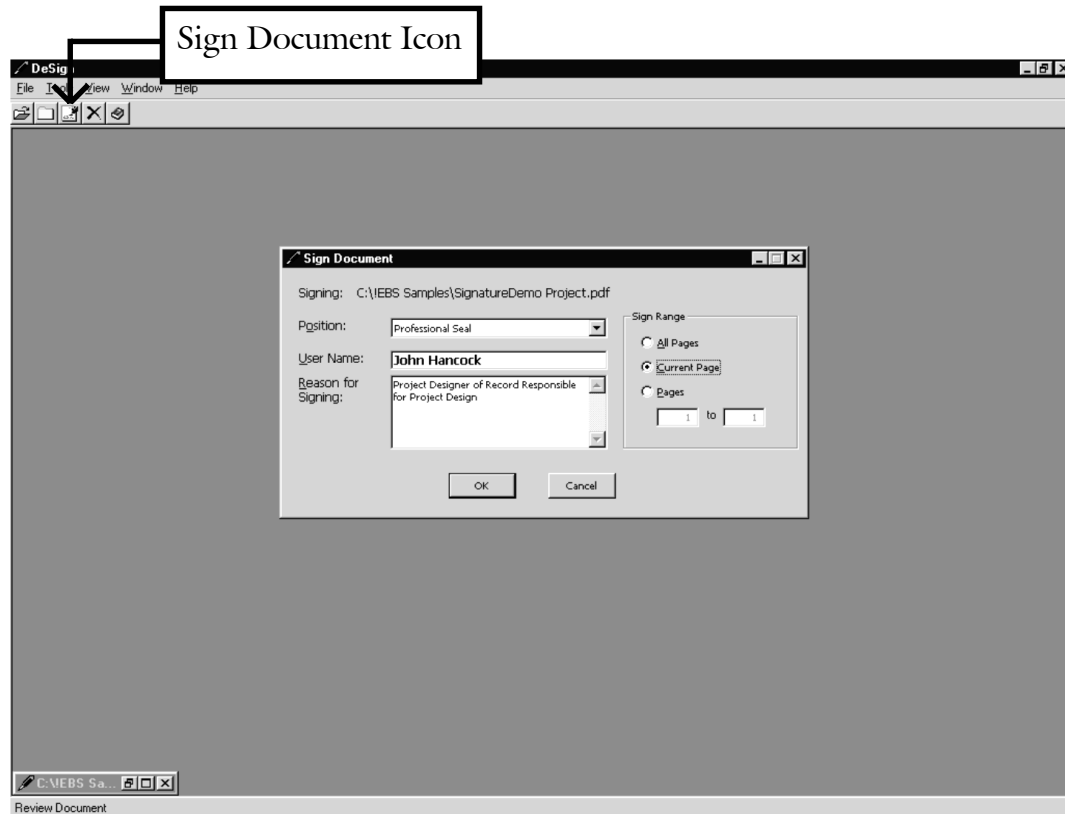


Figure 5.8

The Sign Document window gathers all of the data required for the signing event. The following fields have to be input: Position, User Name, Reason for Signing, and Sign Range.

- Position** The user should select from the list of predetermined positions. These positions are the positions available on the drawform or specification cover sheet for signature or initials. Note that there are two different positions for the SATTO and EFDLANT Approving Official, one for the signature and one for the date. Any defaults selected in the Tools..Options menu will be selected automatically.
- User Name** The user should type in their name as they want it to appear in the official signature record. The default name entered in the Tools..Options menu will appear by default.
- Reason for Signing** This block contains text concerning the reason the user is signing the document. A default reason will be displayed based on the position selected. This reason may be changed or additional information added by typing in the box. *Do not hit Return.* The text will automatically wrap, so returns are not required. This information is recorded and can be reviewed at any time in the future by selecting the signature on a signed PDF using a computer with *PenOp Adobe Acrobat Plug-In* installed.

**Sign Range** The sign range is the start and end PDF page number for the signing event. This range must be continuous and be within the page limits of the file. Note: These page numbers refer to PDF page numbers and not drawing sheet numbers. For specifications, the range is one page. The page number of the cover sheet to be signed should be selected. Even though the specification signature appears on only one page, the entire file is included in the security checksum, and therefore the signature security applies across the entire document.

Once the data has been entered for the signing event, select OK.

## 5.2.6 Capture Signature

The *PenOp* Signature Capture window is now displayed as shown in Figure 5.9.

At this time, the actual signature to be inserted into the PDF file is captured.

Using the digitizer pen, sign your signature or initials as you normally would. If the digitizer is configured correctly, the window on the screen will be mapped exactly to the dimensions of the active area of the digitizer tablet. Should you have trouble signing and need to re-sign, simply press the CLEAR button at the bottom of the window. This will erase the signature, so a new one can be entered. When you are pleased with the signature, press OK. The final capture window will be displayed, as shown in Figure 5.10, to allow final inspection of the signature scaled to fit within the window. If the signature is acceptable then press the Accept Signature button. If you wish to re-enter the signature, press the Re-Capture Signature button and the capture window will reappear. After pressing the Accept Signature button, the signature will be inserted onto each page in the sign range at the proper position.



Figure 5.9



Figure 5.10

The status bars indicate the progress of this operation. When completed, the file is saved and re-opened. The window shown in Figure 5.11 is displayed to indicate success saving the file.

The user can now apply another signature or close the file and exit the program.



Figure 5.11

## 5.2.7 Options

The *Tool..Options* menu item allows the user to select default values for commonly used fields to help speed use of the program. The configuration window that is displayed is shown in Figure 5.12. Default values can be selected or entered as appropriate. (See Section 5.1.3)

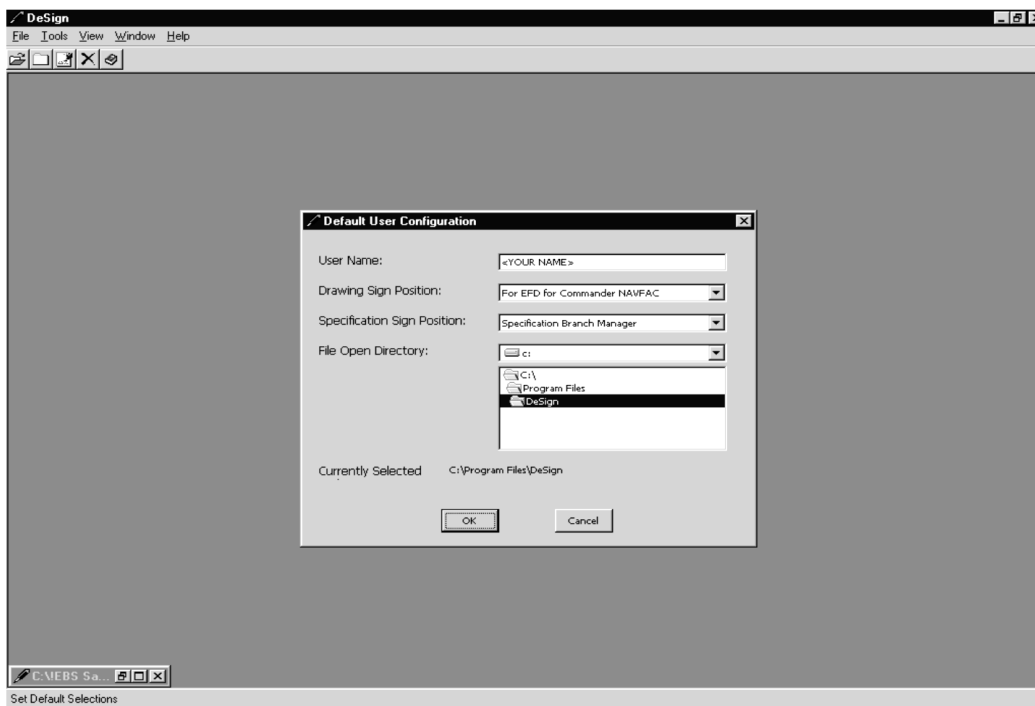


Figure 5.12

## 5.2.8 Removing Signatures

It may be necessary to remove a signature inadvertently placed or if changes are to be made to the file. The only way to remove a signature is through *DeSign*. The remove signature feature can be found under *Tools..Remove Signatures* or selecting the "X" icon. The remove signature window is shown in Figure 5.13. Simply select the position for which you wish to remove signatures, select the page range, and press OK. The signatures will be removed and the file will automatically be saved. A message box will appear indicating the success of the changes and subsequent file save. A signature applied over a range should be removed for every page in that range. No partial signature removal is allowed.

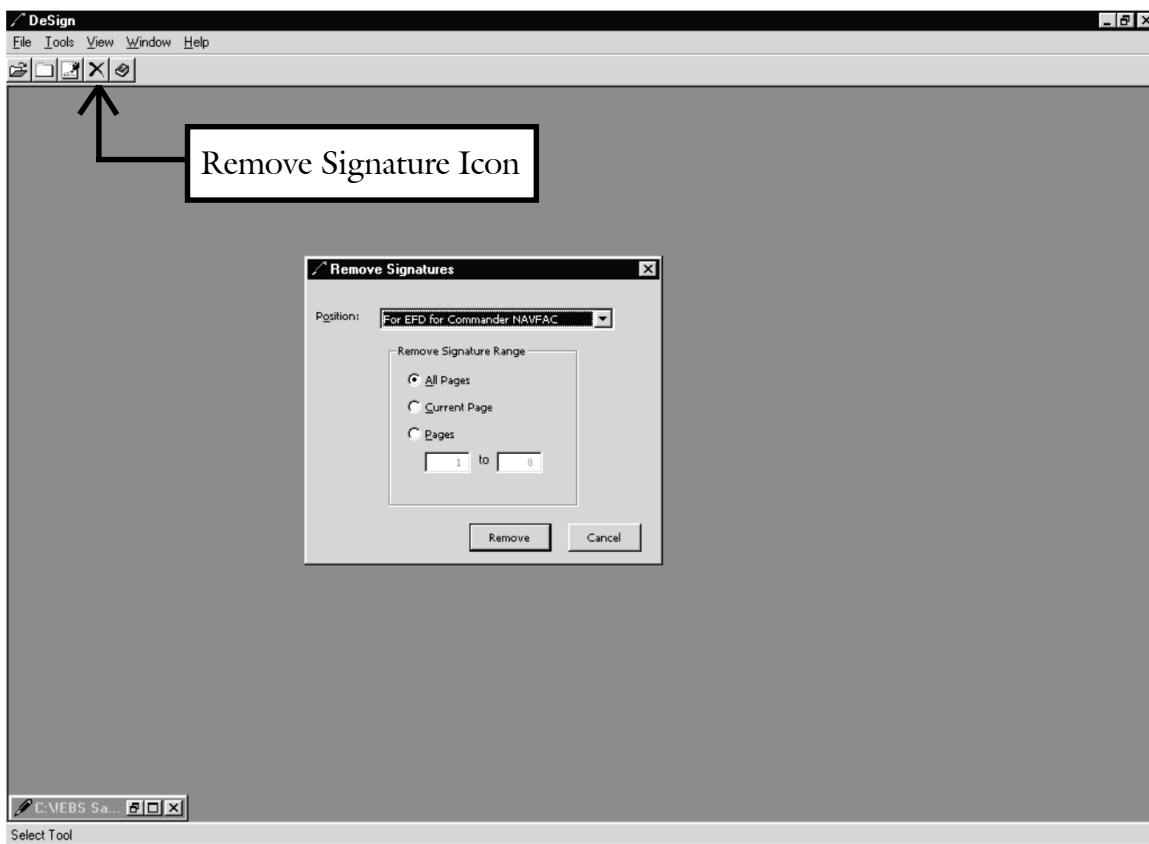


Figure 5.13

## 5.2.9 Accessing Help

Help can be accessed from the *Menu* by selecting *Help...Help Index* or by clicking the Help tool bar button on the *DeSign* toolbar. When selected a help file will be displayed which covers the basic functions of *DeSign*.

## 5.3 Uninstalling *DeSign*

*DeSign* can be removed by accessing the *Add/Remove Programs* option from the *Windows Control Panel*. When asked about removing certain files because they may be shared with other applications, it is best to only remove the files associated with *PenOp* (penop\*\*.ocx or dll). The other files may be used by other *Visual Basic* based applications or applications using *Adobe Acrobat*.

## 5.4 FAQ – Frequently Asked Questions

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*How do I handle multiple consultants signing a PDF file when they may be in different locations?*

As discussed in the preceding instructions, a signature on the drawing is placed over a range of pages. As long as the specified range is not broken, the signature remains intact and effective. Since a signature applies only to the range specified and not to a file as a whole (drawings only), it is possible to sign a range of sheets prior to combining them into the master PDF file. One example would be, the structural designer of record for a given project, signing the structural sheets in the P.E. Seal location, and initialing the A/E reviewer block. Once the files are signed, the file can be forwarded to the lead consultant at which time they can be incorporated into the master PDF. Any signatures which span over multiple ranges or disciplines (i.e. Chief Arch/Engineer, LANTDIV approvals, etc.) would be applied separately to each range or added after the master PDF file was created depending on the future distribution methods to be used. As mentioned in section 1.3.2 and Appendix A, the AIC/EIC should be consulted prior to determining whether a master PDF file will be created. It may be necessary to leave the PDFs split into smaller subsets to facilitate distribution via the Internet.

*Can I add or delete pages from the PDF file after signing the file without removing signatures?*

In many cases, this is the proverbial “have your cake and eat it too” scenario. The main function of using a secured signature process is to approve a final document and be able to detect any potential changes. Therefore, the file should not be signed until it is finalized. It is possible to add or delete sheets from the drawings due to the way it is signed. The drawings are signed by page range and therefore the security applies over the range. If a drawing isn’t included in any signature ranges then it can be deleted. A drawing can be inserted in between two other drawings if there is no signature range spanning over the insertion point. An example would be if pages 2-4 were signed, then pages 5-10 were signed. A drawing can be inserted between pages 4 and 5 without error. This is because the signature that applied to pages 2-4 only approved and secured those pages and similarly the signature for pages 5-10 applied only to that range. When these signature are checked for changes to the document they only verify the pages they approved originally, not the entire document. This feature does not apply to specifications, because each signature approves and covers the entire file. Therefore the specification can not be changed after it is signed unless you remove the signatures.

*What information is stored with the signature?*

Claimed Identity -	The name of the signatory
Timestamp-	The date and time the signature was written, together with hardware identification
Document Checksum-	linking the individual act of signing to a single document to prevent signature re-use. This uses RSA Data Security Inc.’s <i>MD5</i> checksumming algorithm, and other techniques.
Signature Measures-	<i>PenOp</i> analyzes biometric measurements of signature behavior: eg., stroke direction, order, speed, acceleration.
Reason for Signing-	Message recording why the signatory was signing
Signature Image-	Retained for cosmetic purposes for rendering on screen or during printing.

*How does DeSign determine the position of the signature?*

*DeSign* determines the position of the signature based on the “signature position” that is selected from the sign window. After the signature position is selected, *DeSign* compares this position to a list of pre-determined coordinates for that signature. The drawing coordinates are based on LANTNAVFACENGCOM standard drawing size and drawform. To insure proper placement of the signatures, the drawing PDF file should be created in accordance with LANTNAVFACENGCOM instructions. The specification coordinates are based on a 8.5” x 11” template coversheet created by CODE 406, LANTNAVFACENGCOM. This template is available for use to insure compatibility. Based on this method, other drawforms or specification templates are not currently supported.

## 5.5 Troubleshooting

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*Message: "Application not able to connect with Adobe Acrobat, insure Acrobat is closed in the task bar (CTRL-ALT-DEL to access close programs dialog)"*

This error can have two potential causes. One, *Acrobat* may be open in the background and is preventing *DeSign* from interacting properly. Exit *DeSign*. Press CTRL-ALT-DEL to access the task manager and see if *Acrobat Exchange* or *Acrobat.exe* is listed. If so, select "End Task" until it disappears. Then restart *DeSign*. If not, then *Acrobat* may not be completely or properly registered in the system. This sometimes occurs on systems where *Acrobat* was recently installed and possibly not executed before. Exit *DeSign*. Start *Acrobat* from the Programs menu. Exit *Acrobat*. Restart *DeSign*. Often this will fix the problem and *DeSign* will run properly.

*Message: "DeSign cannot run at this time. Acrobat is in use or is not installed."*

This error occurs if *Adobe Acrobat* is currently running or if it has not been installed. Verify system has *Adobe Acrobat* installed. If it is installed, then it is possible that *DeSign* has detected *Adobe Acrobat* executing. If *Adobe Acrobat* is open, exit the application and restart *DeSign*. If it doesn't appear to be running, it is possible that it is open in the background. Press CTRL-ALT-DEL to access the task manager and see if *Acrobat* or *Acrobat.exe* is listed. If so, select *End Task* until it disappears. Then restart *DeSign*.

If *Acrobat* does not appear under the task manager, it is possible that the link to *Acrobat* was lost within *Windows*. This can be reset by exiting *DeSign*, start *Adobe Acrobat* and then close *Adobe Acrobat*. When *DeSign* is restarted, it should be able to reestablish the link with *Adobe Acrobat* and execute properly.

If none of these methods resolve the problem, then reboot the machine and try again.

*Message: "Unable to Open File..."*

This error indicates any number of file access problems. If you are accessing files over a network insure that the network is available and not experiencing problems. Also, this error may indicate that the PDF file has an error, open the same file in *Adobe Acrobat* outside of *DeSign* and verify file is not corrupted.

*Message: "Invalid Filename..."*

Although there are many errors related to this class of message, commonly this is due to the *PenOp Acrobat Plug-in* not being properly installed. Verify the installation of the plug-in by accessing it through *Adobe Acrobat*.

*Message: "File is currently in use..."*

This message indicates that the PDF file you have selected to open may be in use by another user. A feature was put into *DeSign* to keep multiple people from signing the file at one time. A file with the same filename as the PDF with a "lok" extension is created in the directory where the file is located when it is first opened. When another user tries to open the file, a check is completed to see if the "lok" file is present. If so, the warning is issued with the default user name of the current user displayed. If the default user name is not valid it is possible to determine the user using *Windows NT*. This is done by right clicking the "lok" file in *Windows Explorer*, selecting Properties, select the Security Tab and select *Ownership*. This will report the creator of the "lok" file. If you are sure no one else is using the file, or that someone had a program failure before exiting *DeSign* (thus not deleting the "lok" file), then deleting the "lok" file will release the file for use by other users.

*Message: Unable to access or save file*

Although *DeSign* can detect if another network user is currently using the PDF file to be signed in another instance of *DeSign*, it is not possible to detect if another network user has the PDF file open in *Adobe Acrobat* directly. If this occurs, *DeSign* will run normally but will be unable to save the file after application of the signatures. If problems are experienced saving the file after the signature is applied, this is often the cause. To correct the problem, the other user must close the PDF file in *Adobe Acrobat* and the signatory should then restart *DeSign* and reload the PDF file. This problem is also avoided by storing the raster PDF file on a local hard drive in lieu of a network hard drive so only one user accesses the file at a time.

## 5.6 Support

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This program was developed in-house by LANTNAVFACENGCOM Design Division. As such, the amount of support available will vary based on the current workload of those involved in development. Before requesting support, please review the “FAQ-Frequently Asked Questions” and “Troubleshooting” sections of the User’s Guide.

We encourage users to forward any questions, problems, or comments to the email address listed on the EBS web page as noted in Section 1.5.3. A response to your inquiry will be returned by electronic mail. Any comments or problems which require changes to *DeSign* will be addressed as time permits.

*If you wish to insure that you receive any updates to the software please complete the registration instructions found on the EBS web page on the LANTDIV Design Division web site.*

# **Electronic Deliverables Media and Format**



## 6. Electronic Deliverables: Media and Format

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### 6.1 Introduction

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Work products for the Engineering and Design Division are increasingly being delivered on electronic media vs. paper. This phenomenon is associated with the desire to share information and take advantage of instantaneous global delivery via the Internet. This section addresses the issues and logistics with the format of electronic files and the media on which they are delivered. Although electronic media options are ever changing, efforts have been made to select current economical, industry accepted and non-proprietary standards for delivery of submittals. These include recordable CD's (CD-r) and 3.5 inch 1.44 MB floppy disks.

### 6.2 Type of Submittal Data and Required Media

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#### 6.2.1 All Electronic Deliverables

All electronic deliverables will be authored in accordance with the respective guidelines presented in appropriate sections of this manual. See Section 1.1 for policy summary and required deliverables. All electronic deliverables will be submitted on recordable CD's (CD-r). Two copies of the CD are required. This is the most economical method for the amounts of data expected. It also facilitates our electronic storage archive system. See additional CD-r criteria in Section 6.2.5, below.

#### 6.2.2 Plans

See "Electronic Bid Solicitation Policy Summary," Section 1.1 for required drawings electronic deliverables.

#### 6.2.3 Specifications

The final contract specifications shall be submitted on the deliverables CD. Copy the *SPECSINTACT* (SISGML) job folder in its entirety to the CD, complete with both the Prntdata and Pulldata subfolders. See Figure 6.1.

##### 6.2.3.1 Submittal Register

At the final submittal, a 3.5 inch floppy disk shall be submitted which contains the submittal register program created using the *SPECSINTACT Jobs* software. In *SPECSINTACT*, from the menu bar, select *Forms, Documents, Submittal Register Program* to create this disk. LANTDIV will forward this disk to the Resident Officer in Charge of Construction (ROICC) and to the contractor for use during construction.

#### 6.2.4 Cost Estimates

The contract cost estimate shall be submitted on 3.5 inch floppy disk for each submittal to LANTDIV in order to facilitate redistribution to other parties. The cost estimate shall also be submitted on the project CD when provided. The cost estimate submitted at the final submittal shall exactly duplicate the electronic cost estimate files provided.

#### 6.2.5 Virus Scanning

All electronic data, regardless of submitted media, shall be virus scanned prior to submission. Virus scanning software should be by a recognized industry accepted vendor. Software should kept current with new virus

patterns as the vendor releases them. See labeling section for virus related information to appear on labels.

## 6.2.6 Recordable CD-r Criteria

**Media Shelf Life** Media shall be produced by a reputable industry accepted manufacturer, 75 year or longer shelf life CD-r's, speed tested to the required recording speed, and either BLUE or GOLD type. (GREEN type is not acceptable) Re-writable CD's (CD-rw) are not acceptable. CD media should be manufactured with a protective coating on the label side surface. Most name brands have the coating but check with your supplier to be sure. This surface should support a writing area (usually white).

**CD Format** CD's shall be written in Joliet format.

**File Names** File names shall be Joliet (long file names) compliant.

**Multi-Session CD's** Record files in one recording session. Multi-session CD's are not acceptable since they are not readable by all CD-ROM's.

**Compression** Files on CD's shall be in uncompressed, native format and devoted to a single project so as to minimize effort of retrieving file information.

**File Restoration** Consideration should be given to the restoration of the information. Data should be prepared in a format and organized in a fashion on the CD so as to minimize the effort of retrieving, restoring, and re-creating the subject information. Issues affecting restoration include program paths, supplemental program property/setting files, externally referenced, linked, or associated files, directory organization of related files, etc.

**External CAD References** External "reference" or "model" files (X-REF's) shall be included on the CD-ROM. Note: Do not "bind" X-REF's to drawing files. These files should be deposited in the appropriate directory. Local X-REF's used only in a particular discipline should be co-located with the corresponding cad files. Global X-REF's used by more than one discipline should be kept in the /Model subdirectory. (See section **Directory Structure**, below for directory structure list)

**Directory Structure** The exact content, quantity, submittal dates, and milestones for digital submittals are addressed separately in the *Guide for Architect Engineer Firms Performing Services for the Atlantic Division* (the A&E Guide), the *Appendix A* project scope of your contract, and in the Section 1.1 of this manual. Although not all directories and associated data are to be included with every submittal, a standard directory structure will be as indicated in figure 6.1 (Please note minimum required content and applicable file types). The CAD discipline subdirectories are based on *A/E/C CADD Standards* and *United States National CAD Standards*. Please provide only the subdirectories required for your project.

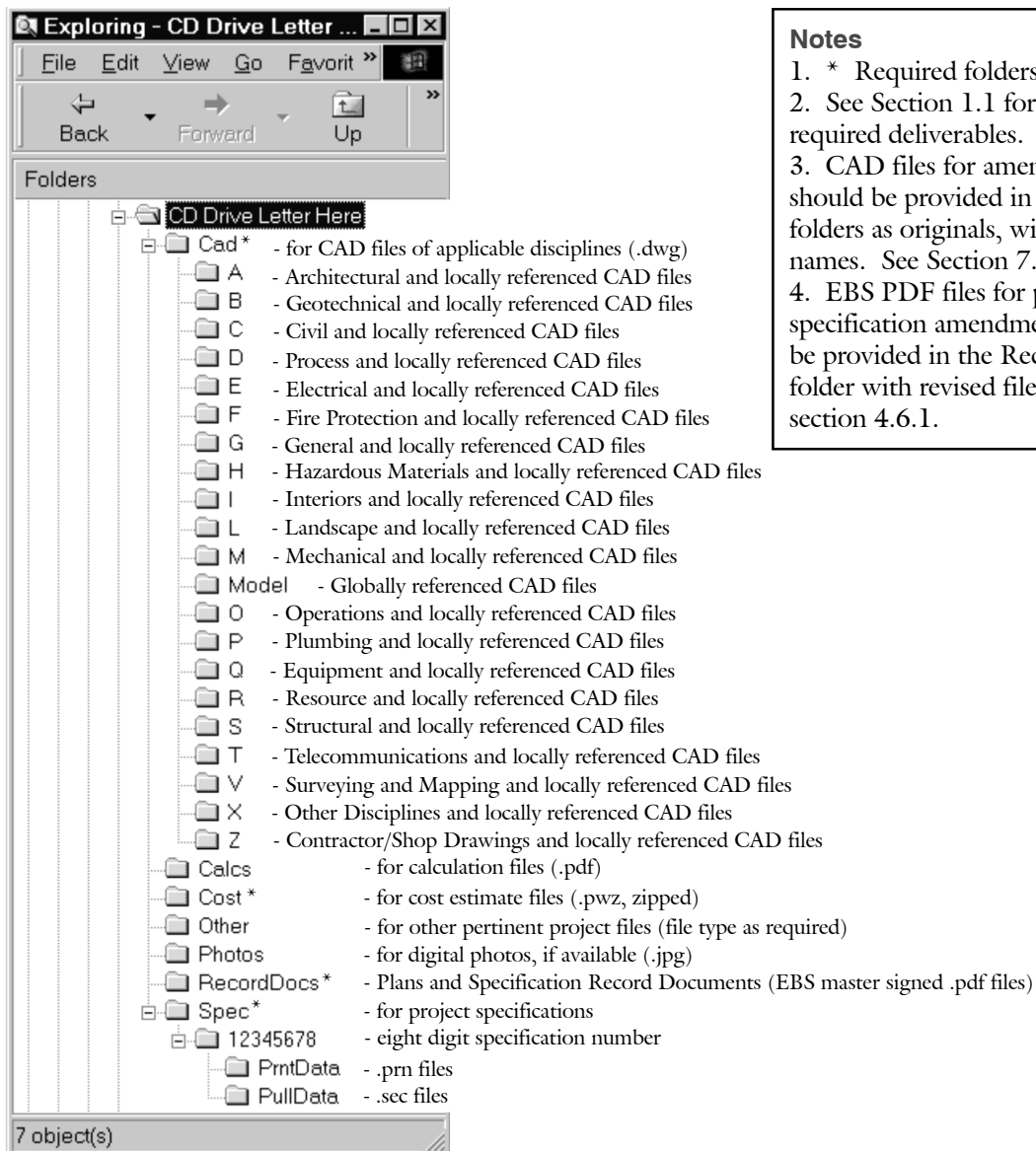
## 6.2.7 Floppy Disk (3.5 Inch) Criteria

Floppy disks shall be 3.5 inch 1.44 MB disks and are only allowed in Sections 6.2.3.1 and 6.2.4. Attempts should be made to organize and prepare the submitted data similar to concepts presented in Section 6.2.6 for CD-r's.

## 6.2.8 Submittal Information and Labeling

**Label Content** CD's and floppy disks shall be labeled with the appropriate project title, project location, LANTDIV job order number, date submitted, construction contract number, specification number, A&E firm name, drawing numbers (for floppy disks only), the name of the person performing the virus scan, and the date the virus scan was performed. Preferred format for this information is as indicated in Figure 6.2.

**Label Type** CD's are susceptible to damage from adhesive labels. If information is to be manually placed on the disk surface, use a non-solvent based marking pen. Some pens and markers can damage the surface. "Sharpie" brand pens are acceptable.



#### Notes

1. \* Required folders
2. See Section 1.1 for minimum required deliverables.
3. CAD files for amendments should be provided in the same folders as originals, with revised names. See Section 7.4.
4. EBS PDF files for plan and specification amendments should be provided in the RecordDocs folder with revised filenames. See section 4.6.1.

Figure 6.1

**Jewel Case** A label with the pertinent job information should be placed on the cover of the jewel case. Extra information can be provided inside the case if desired. CD's should be submitted with a standard protective jewel case designed for a single CD.

Project Name and Location:	_____
LANTDIV Job Order Number:	_____
Date:	_____
Construction Contract No:	_____
Specification Number:	_____
A/E Firm:	_____
Drawing Numbers:	_____
Virus Scan Performed By:	_____

Figure 6.2

# CAD Standards

## 7. CAD Standards

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### 7.1 Preface

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This CAD Policy has been developed by the Design Division of LANTNAVFACENGCOM for use by both in-house personnel and the A/E community. This policy is to be used in conjunction with the *A/E/C CADD Standard* (current Release 1.8), produced by the CADD/GIS Technology Center for Facilities, Infrastructure and Environment (formerly the Tri-Service CADD/GIS Technology Center), and the *United States National CAD Standards* (current Version 1.0), published jointly by the National Institute of Building Sciences (NIBS), American Institute of Architects (AIA), Construction Specifications Institute (CSI), Tri-Service CAD/GIS Technology Center and U.S. Coast Guard. This policy only addresses deviations from the previously mentioned standards and is not intended to be a fully detailed stand-alone document.

Copies of the *A/E/C CADD Standard* may be obtained at no cost from the CADD/GIS Technology Center. Copies of the *United States National CAD Standard* may be purchased from NIBS, or from the individual publishing agencies (NIBS, AIA, CSI).

### 7.2 Introduction

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This policy provides guidance and procedures for preparing CAD products for the Design Division of LANTNAVFACENGCOM. The aim of the policy is to insure consistent CAD products that are in compliance with the *A/E/C CADD Standard* and the *United States National CAD Standard*. As these Standards evolve, this policy will be updated to reflect the latest revisions.

The CAD Policy is produced and maintained by the Design Division CAD Council, whose members serve on a rotating basis. Any questions regarding this policy should be addressed via methods described in Section 1.5.3.

### 7.3 Target System

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This policy is written around *AutoCAD 2000*, which is the CAD system currently in use in the Design Division. This does not prohibit the use of other CAD systems or third party packages designed to work with *AutoCAD*. All products developed under this policy shall be saved in a format which is readable by the target system (.dwg). Any objects or entities created by other systems or softwares must be readable by the target system.

### 7.4 File Naming and Sheet Identification

---

File names and sheet identifiers shall be in accordance with the Industry Standard file naming conventions of the *United States National CAD Standard*, with the additional 5-character prefix, for both model files and sheet files. The 5-character prefix shall consist of the decade indicator (0-9) and the 4-digit Design Division Job Order Number.

### Model File Naming Convention:

*D PPPP DC DT UUUU .dwg*

where: D      1 Digit Decade Indicator (0-9)  
        PPPP   4 Digit Code 04 Job Order Number  
        DC     Industry Standard Discipline Code/Designator  
        DT     Tri-Service Optional Drawing Type Code  
        UUUU   User Defined.

### Sheet Identification Convention:

*DC T SS B SD*

where: DC     Industry Standard Discipline Code/Designator  
        T     Industry Standard Sheet Type Code/Designator  
        SS     Sheet Sequence Identifier  
        B     Building Identification, Phase, System, etc. to subdivide large projects (optional)  
        SD     Supplemental Drawings (Revisions, New Issue, Record Drawings), as required

### Sheet File Naming Convention:

*D PPPP DC T SS B SD .dwg*

where: *D*      1 Digit Decade Indicator (0-9)  
        *PPPP*   4 Digit Code 04 Job Order Number  
        *DC*     Industry Standard Discipline Code/Designator  
        *T*     Industry Standard Sheet Type Code/Designator  
        *SS*     Sheet Sequence Identifier  
        *B*     Building Identification, Phase, System, etc. to subdivide large projects (optional)  
        *SD*     Supplemental Drawings (Revisions, New Issue, Record Drawings), as required

*Note: The last 8 characters of the Sheet File Name are the same as the Sheet Identification.*

The *A/E/C Cadd Standards* contains tables that show each of the Codes/Designators used in the above naming conventions. Tables for Industry standard designators may also be found in the *United States National Cad Standards*.

The Supplemental Drawing (SD) characters used in the Sheet Identification Convention and the Sheet File Naming Convention are shown in *Appendix C* of the *Uniform Drawing System (UDS)*, *Chapter 1*. Abbreviations to be used are:

*RD* for Record Drawings (As-Builts)  
*R#* for Partially Revised Drawings  
*X#* for Totally Revised Drawings  
*AD* for Addenda Drawings (Additional Drawings not included in the original Contract Documents)

Trailing dashes (---) and/or underscores (\_\_\_) MAY be omitted in the Sheet Identification and Sheet File Name.

The ROMANS.SHX font file shall be used for all 1/8" (3mm) or smaller text.  
The ROMAND.SHX or SWISSB.TTF font files shall be used for all 1/4" (6mm) text.  
The SWISSB.TTF or SWISSBO.TTF font files shall be used for all text larger than 1/2" (12mm).



## 7.6 Sheet and Border Size

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The standard sheet and border have been developed to accommodate plotting to either ANSI D or ISO A1 size papers. The resulting sheet size (NAVFAC D, as shown in Figure 7.1) is 33" x 22", and is "soft" converted to metric (approx. 838x559). The border provides 3/4" clearance on the top, bottom and right sides, and 1.5" on the left side. The vertical title block is 2" wide, resulting in a drawing area of 28.75" x 20.5". See Appendix B for help on printing to various standard sizes of paper.

The border sheet has been saved in *AutoCAD 2000*, *AutoCAD R13*, and DXF formats, and is available on the Design Division WEB site. The file names are NavFacD.dwg for *AutoCAD 2000*, NavFacD\_13.dwg for *AutoCAD R13* and NavFacD.dxf.

**THESE BORDER SHEETS MUST BE USED TO PROPERLY IMPLEMENT THE ELECTRONIC SIGNATURE PROCESS USING THE DESIGN SOFTWARE.**

## 7.7 Layer Names

---

The format for layer names shall be in accordance with the Second Edition of the *AIA Layer Guidelines* which comprises a part of the *United States National CAD Standard*. The Simplified Method referenced in the *A/E/C CADD Standard* shall not be used.

## 7.8 Pen Weight / Line Colors

---

Pen weights and colors shall be in accordance with the *United States National Cad Standard*. Plotted files (hardcopy or PDF) shall be Monochrome, unless color plots are specifically requested, and shall use color numbers assigned to "Black" or "Halftone". (revised May 2000)

## 7.9 Support Files

---

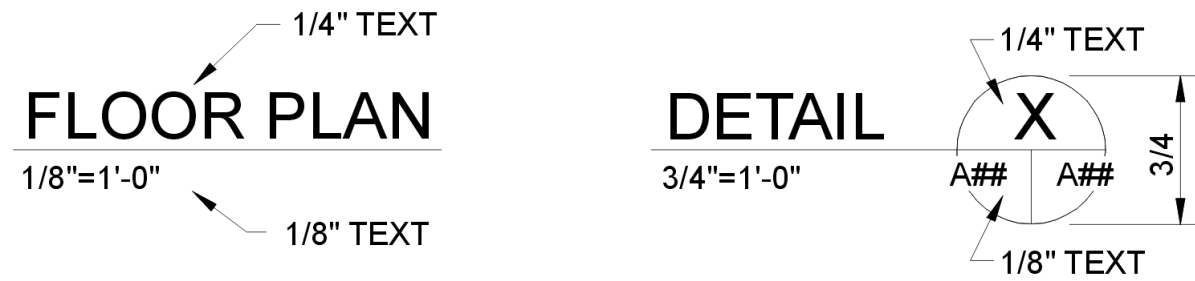
Support files necessary for initializing, editing and plotting drawing files shall be standard files provided as part of the *AutoCAD* software, or files modified by and for the Engineering and Design Division. Copyrighted, third party files shall not be used. Support files include text fonts, hatch patterns, line types, menus, etc

## 7.10 Standard Symbols

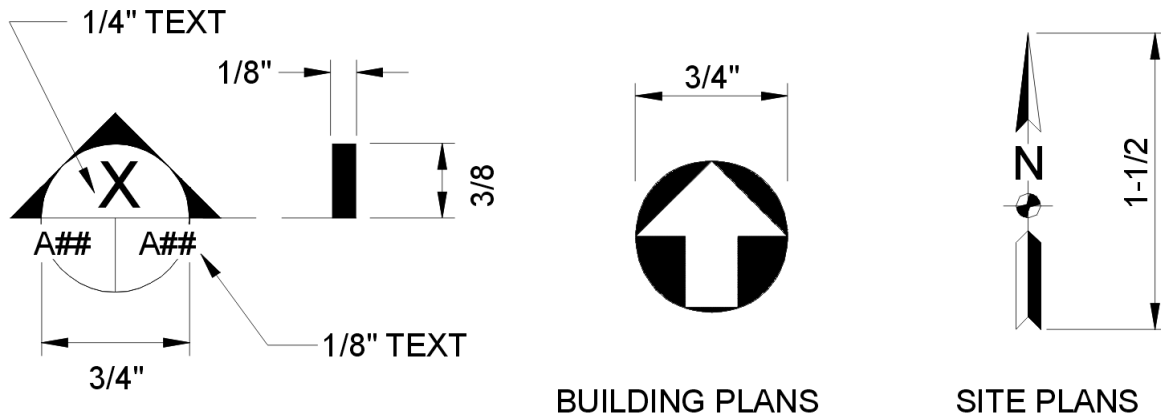
---

Figures 7.2 and 7.3 contain standard symbols in English (in) and Metric (mm) units, respectively.



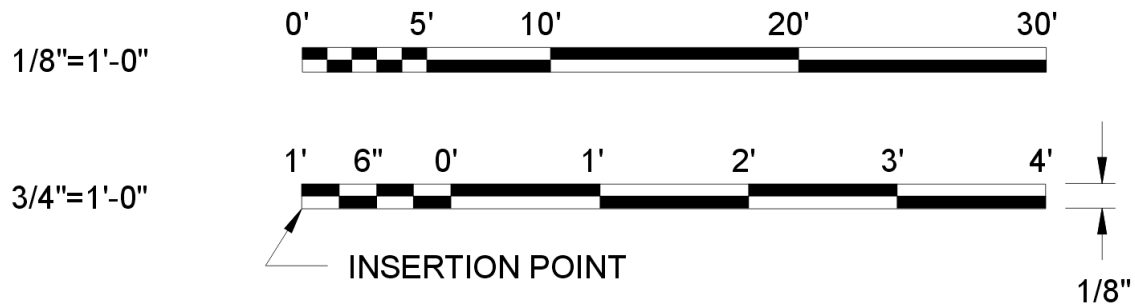


## TITLE LINES



## SECTION CUTS

## NORTH ARROWS



## GRAPHIC SCALES

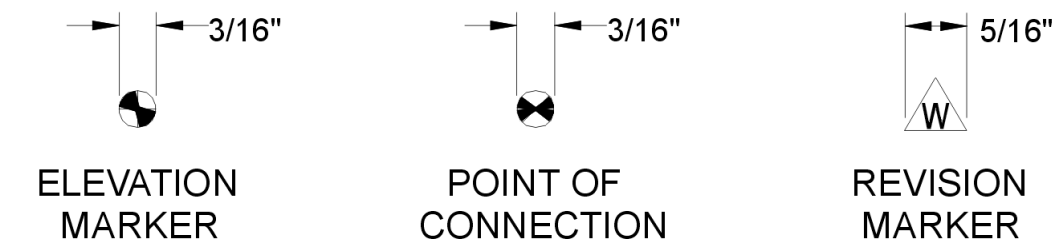
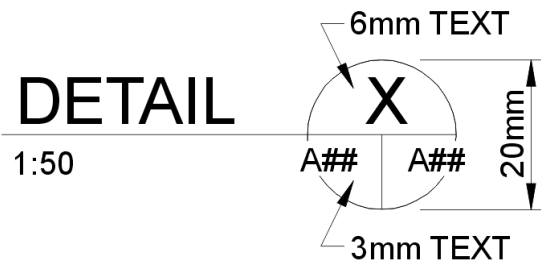
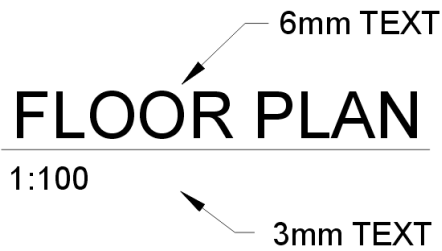
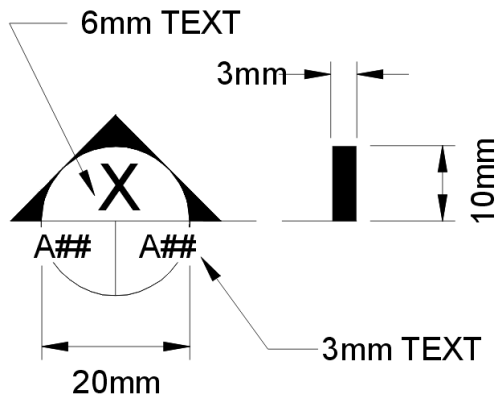


Figure 7.2 - Standard Symbols, English Units



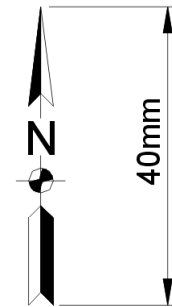
## TITLE LINES



## BUILDING PLANS



## SITE PLANS

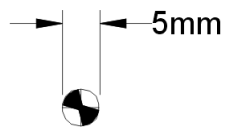


## SECTION CUTS

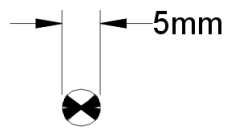
## NORTH ARROWS



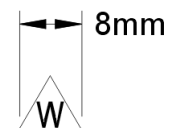
## GRAPHIC SCALES



## ELEVATION MARKER



## POINT OF CONNECTION



## REVISION MARKER

Figure 7.2 - Standard Symbols, Metric Units



# Appendix A

# Appendix A

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## A.1 EBS Drawings and Specifications Multi-Sheet PDF Checklist

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1. Prior to beginning the signing process, check with the LANTDIV AIC/EIC to see if there will be any special requirement to sign discipline sheets “separately” as opposed to all documents at one time. (This may be required if the plans need to be “separated” for web site posting.)
2. Prior to beginning the signing process, make a backup copy of the unsigned PDF files.
3. Does PDF open to bookmark view?
4. Does PDF open to first sheet in “full view” mode.
5. Spot check cover and other sheets to verify signatures have been applied.
6. Verify that “Sat To” note is applied on cover sheet.
7. Spot check some bookmarks to make sure they go to the right sheet in full view mode.
8. Are bookmarks categorized by discipline with sub-bookmarks for individual sheets under the discipline?
9. Are all sheets in the correct sequence?
10. Verify that PDF page numbers match Cad sheet numbers (spot check).
11. Is PDF total sheet count correct?
12. Is there a single PDF file for the drawings and a single PDF file for the specifications with the appropriate filenames?

# Appendix B

# Appendix B

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## B.1 Help with Printing PDF Drawings to Various Scales

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### NOTE:

This help is offered as general assistance with basic printing issues regarding drawings. It is not intended to be a complete resource. There are many more techniques and options that are available. These depend on software and printing equipment used. *Adobe Acrobat 4.0* software is assumed for these instructions.

### B.1.1 General

The Electronic Bid Set you are viewing has been designed to allow flexibility in printing that meet your budget and needs. Drawings can be printed at virtually any size you desire. Most personal computers can print them on standard printers. There is a large variety of inkjet and laser printers that can print from letter size 11" x 17" that are available for PC's. However, if a larger format is desired, you may need access to larger "Plotters" or commercial printing equipment. Please verify that your equipment is capable of printing large PDF documents before making a purchase. Look for "Postscript" capability in the equipment specifications. Alternatively, you may choose to have a commercial print shop print the documents for you at a size and scale that meets your needs.

The PDF drawings provided are in NAVFAC D (22"x33") size format. We are transitioning to the hybrid 22"x33" NAVFAC D size in order to facilitate printing of either 100% (ANSI D and ISO A1) or 50% (ANSI B and ISO A3) size on either US/Metric paper from the same drawing title block. This allows for 50% printing on laser printers supporting ANSI B and ISO A3 paper sizes without difficulty. The document size can be found in the lower left corner of the *Acrobat* screen and on the drawing itself. Most individuals will desire drawings printed at 100% scale or 50% scale. It is important to note that when printing from *Acrobat*, a "Shrink To Fit" checkbox appears in the *Acrobat* print window. If this is checked the entire original size document will be shrunk to fit the "printable area" of the paper size you are using. Most printers NEVER print all the way to the edge so the "fit area" will be less than the paper area. This allows you to print to any paper size, including 8 1/2 x 11, but the resulting scale of the print will vary accordingly. Other print drivers may have a percentage reduction feature that allows more flexibility and exact control. Following is guidance on printing to some popular format sizes.

### B.1.2 Printing Signatures and Other Annotations on PDF's

Electronic signatures on our PDF drawings are considered "annotations" to *Acrobat*. Therefore, the "ANNOTATIONS" check box must be checked (found in the initial print window in the "Print Range" area of the window).

### B.1.3 Printing Full Size NAVFAC D (100%) TO ARCH D, ANSI D, or ISO A1 Paper

Since all drawings are provided in their original full size format, printing full size is easy. Provided your printer is capable of printing PDF's at this size, simply select "Print" from *Acrobat* and do not select the "Shrink to Fit" option. You may select to print the entire set or only selected sheets.

### B.1.4 Printing Half Size NAVFAC D (50%) TO ANSI B/ISO A3 Paper

Select the print command from *Acrobat*. Do not use the "Shrink to Fit" option. Select the 50% reduction factor from your specific printer driver (usually under the "Graphics" tab), if it is available. If the reduction factor is not available, the best you will be able to do is "Shrink to Fit". This will depend on your "printable area" (see General above and, Printer Driver Guidance below). Select your final paper size. The resulting print on either ANSI B or ISO A3" paper will be to 50% scale of the original.

## B.1.5 Printer Driver Guidance

Your specific printer driver may have additional features not mentioned here. You will need to explore its capabilities on your own. However, Adobe Corporation publishes Postscript Printer Driver files (PPD) which can enhance your printer's capabilities to print PDF's and other documents. These PPD files are free and specific to your printer. They must be downloaded and installed using Adobe's free AdobePS utility. Information can be found at <http://www.adobe.com/prodindex/printerdrivers/main.html>. Additionally, they can be found on the free *Acrobat Reader* CD that is readily available.





# Appendix C

# Appendix C

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## C.1 Installing *Adobe Acrobat 4.0*

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1. Install *Acrobat* per Adobe's instructions.
2. When complete *Adobe PDFWriter* should appear in your system printers folder under the *Windows Control Panel/Printers*. Additionally, *Adobe Distiller* should be installed. *Distiller* will not be used in the EBS process.
3. Certain default properties should be preset in the *PDFWriter* driver. Go into the properties of the *PDFWriter* via the *Control Panel* method. Right click on the driver and either select properties (*Win 95/98*) or Document Defaults (*NT*). Set the following defaults, in addition to any others you desire.

### **Page Setup Tab**

Select 300 dpi in the *Graphic Resolution Area*  
Set scaling to 100%

### **Compression Objects Tab**

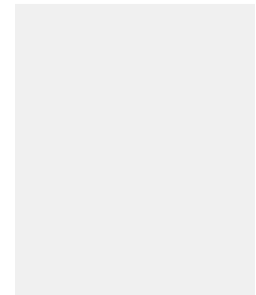
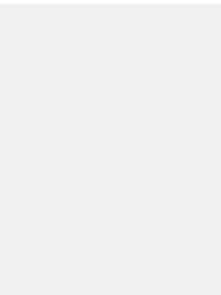
Select checkbox for *Compress Text and Line Art*  
Under *Color/Grayscale Images* set to compress using *JPEG Medium*

### **Font Embedding Tab**

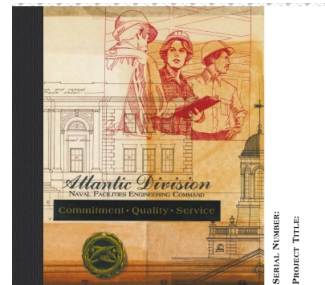
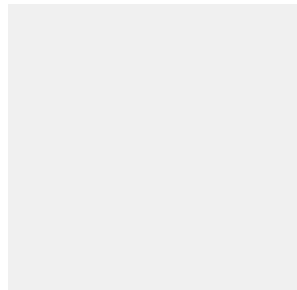
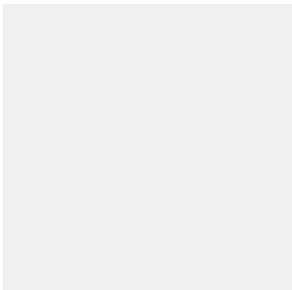
Select *Embed All Fonts* checkbox.  
Deselect all other checkboxes







DESIGNED & ENGINEERED BY:  
**LANTDIV**  
 NAVAL FACILITIES ENGINEERING COMMAND



$\frac{3}{4}" = 1'-0"$



INSERTION POINT

GRAPHIC SCALES

Developed by Atlantic Division  
 Naval Facilities Engineering Command  
 Engineering and Design Division  
 1510 Gilbert Street  
 Norfolk, VA 23511

